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The New Motorcycle Enthusiasts' Magazine 35c

CYCLE WORLD

JANUARY 1962

Disc Brakes For Cycles Death Valley Run Scooter Test: Vespa Grand Sport

1962 Models Three Flavors Of Mini Bikes West Coast Track Racing Season

INTAKE & EXHAUST RAM TUNING

1962 TRIUMPH BONNEVILLE TEST

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CYCLE WORLD

JANUARY 1962, VOLUME 1, NO. 1

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THIS MONTH'S COVER No. 74, Clark White, being pressured by TT champ Dick Dorresteyn, No. 76, in recent steeple-chase event at Bonelli Stadium in Saugus, California. Both are Triumph Bonneville-mounted. Photo by Walt Mahony.

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THE SERVICE DEPARTMENT

BY GORDON H. JENNINGS

As the above title suggests, this space is to be devoted to the problems that inevitably arise during the normal, day-in, day-out operation of a motorcycle. Broken chains, burned valves, wheel-patter, hard-starting and all of the multitude of ills common to hard-used machinery — in which category the motorcycle most certainly belongs. Advancing technology may eventually bring us to that glad day when routine maintenance will be a simple matter of checking the fuel and oil levels; but for the present, the problem is a bit more involved than that. In fact, we might as well admit now that we think the problem is too involved for one man — or even one small group of men — as indeed it is. Therefore we ask, even implore, that if you have had a difficult service problem at any time, and have found a proper cure, please do write and let us know the details. In this way, we will be able to spread the information throughout the entire cycle world (ouch!) and everyone in the sport will benefit. We will also be keeping in touch with the various manufacturers' service organizations and will pass along the list of whatever service bulletins come our way.

Apart from the routine stuff, we also intend to cover the more esoteric material: speed-tuning information, competition perparation and some of the finer points of shop practice. We have seen some devilish-clever tricks done by a few of the "old-hands" in the game and these will be passed along — complete with pictures, drawings or whatever might be necessary to get things across — whenever something of special interest presents itself. Here, too, the average reader — even those who have been with the sport only a short time — may well have something of value to offer.

These things cannot be predicted in advance, but we suspect that a substantial part of our correspondence will ultimately be dealing with the problems presented by the sport of dirt-riding — which comes in many forms (scrambles, hare-and-hounds, etc) and which is liable to radically reduce equipment life in any of its forms. Aside from the obvious factors, such as the detrimental effects of sustained high engine speeds and loads, there is another very important consideration: the dirt itself. As the military discovered in the North African campaign (which was not much different than some current western events), dust can destroy even the best of engines very quickly. The average 30.5 cubic inch engine pumps about 40 cubic feet of air through itself every minute at the prevailing competition speeds, and it doesn't take a very high percentage of dust in that much air to have a tremendous effect on the service-life of the engine. There has been a strong trend toward the use of paper-filter air cleaners and this is certainly the proper thing to do. If the filter is large enough, and is cleaned and/or replaced fairly frequently, the power loss involved is small and the gain in reliability very great. This is particularly true of the 2-strokes, which pump the air through both cylinders and crankcase — thus giving the dirt a double chance to do damage. And, too, in the 2-strokes, the dust has been proven to be a strong factor in spark-plug fouling. Fortunately, a great many manufacturers have begun to supply air-cleaners (a few, frankly, of doubtful effectiveness), and the problem now is very often settled when the bike is purchased.

A new development in cylinder design that could have far-reaching implications came to our attention just recently. A British company, which markets a Villiers-powered scrambler, has put into limited prduction a modified version of the 15 cubic inch 2-stroke Villiers that has an all-aluminum cylinder, not an aluminum cylinder with an iron liner, nor even one with a chromium-plated bore, but simply a bare aluminum cylinder. This scheme has been tried before, using high silicon-content aluminum alloys; but such alloys are extremely difficult to cast or machine, and efforts in that direction have failed. The Cross Manufacturing Company, the developers of this new approach, has ignored the cylinder to concentrate on the piston.

The Cross piston is conventional enough in general form, but embodies a couple of very important departures from the usual. There are, for example, two semi-circular inserts in what would normally be the thrust-carrying surfaces of the slipper-type piston skirt. These are of high-carbon steel and are riveted in place, with their surfaces standing just .004 clear of the aluminum. They carry all of the side thrust at the lower end of the piston. At the upper end of this piston, things really do look peculiar. The ring — there is only one — is a seven-turn spiral, with a matching seven-turn spacer to hold the contact edges in position. This spacer also serves to position the piston in the bore and the knife-edged ring rides with a very light radial pressure against the sides of the cylinder bore. Due to the considerable spreading around of contact pressures, there is, presumably, no tendency for the rings to force through the lubricating film in the cylinder and to score the surfaces — which always been the curse that defeated previous atempts in this direction.

And what are the advantages gained by all of this work? There are several. Ultimately, of course, the Cross system could be substantially less expensive than presently used methods and a cylinder of this type would certainly be light. However, a bigger attraction is the high rate of heat rejection possible when there is no insulating joint between an iron liner and an aluminum cylinder to get past. The best of it, though, is that piston seizure — which is the most difficult problem to overcome in high-output 2-strokes —is virtually eliminated. Aluminum pistons in any other engine always expand a little bit (and sometimes a lot) faster than their cylinders. If the engine gets hot enough, the pistons become, first, a tight slip-fit, then a light press-fit and so on and so forth, until very quickly they pass through all of the various fits, reach the drive-fit stage and finally cease to move altogether. Riders who have had this happen rapidly in the middle of a high-speed bend will never forget the experience, and protection from that, alone, may be enough to justify whatever the Cross people may charge for the conversion.

Next month, and in the following month, we hope to fill this space with material of more immediate interest to the average rider. Your letters will help with that. But, we will continue to report on the academically interesting as well. And, there will be a major technical article in each issue for as long as there is new ground to cover — and that seems to mean forever from where we stand now.

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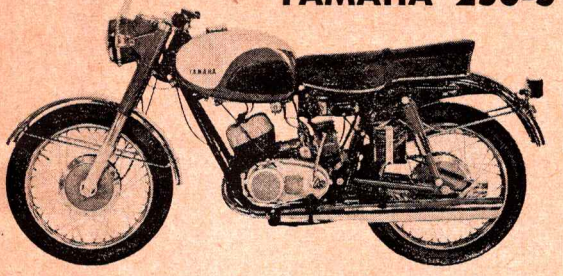
for '62

Presents the Masterworks of the Motoring Age

YAMAHA 250-S



NEW HIGH-PERFORMANCE 250cc SPORT MODEL—15 cu. in., new 5-speed gearbox, more HP, more reliability. Available in 3 models for street and competition use.

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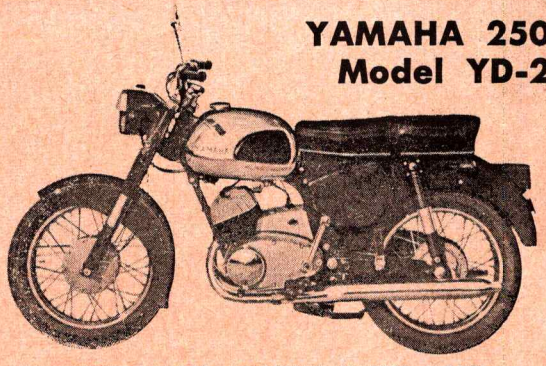

NEW BEEFED-UP 250cc ELECTRIC STARTER MODEL—more HP, top acceleration, new 4-speed gearbox. Push button and GO!

The Name That Says "Quality" in Any Language

New fun in '62

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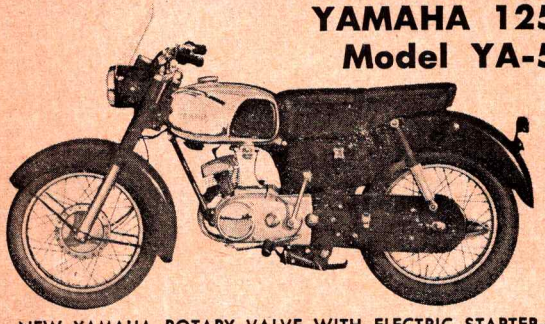

NEW YAMAHA ROTARY VALVE WITH ELECTRIC STARTER—Dont let the cubic displacement fool you. A 125cc smart and smooth single. RIDE ONE and you will be convinced this is the engineering masterpiece designed to set the pace in '62!

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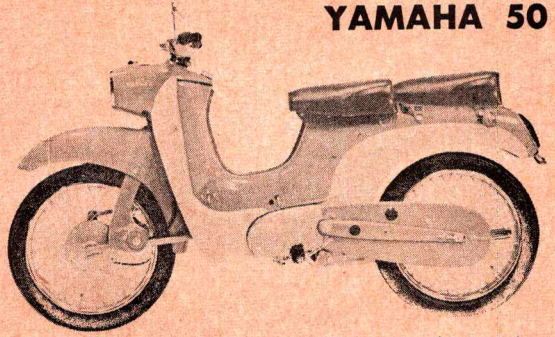

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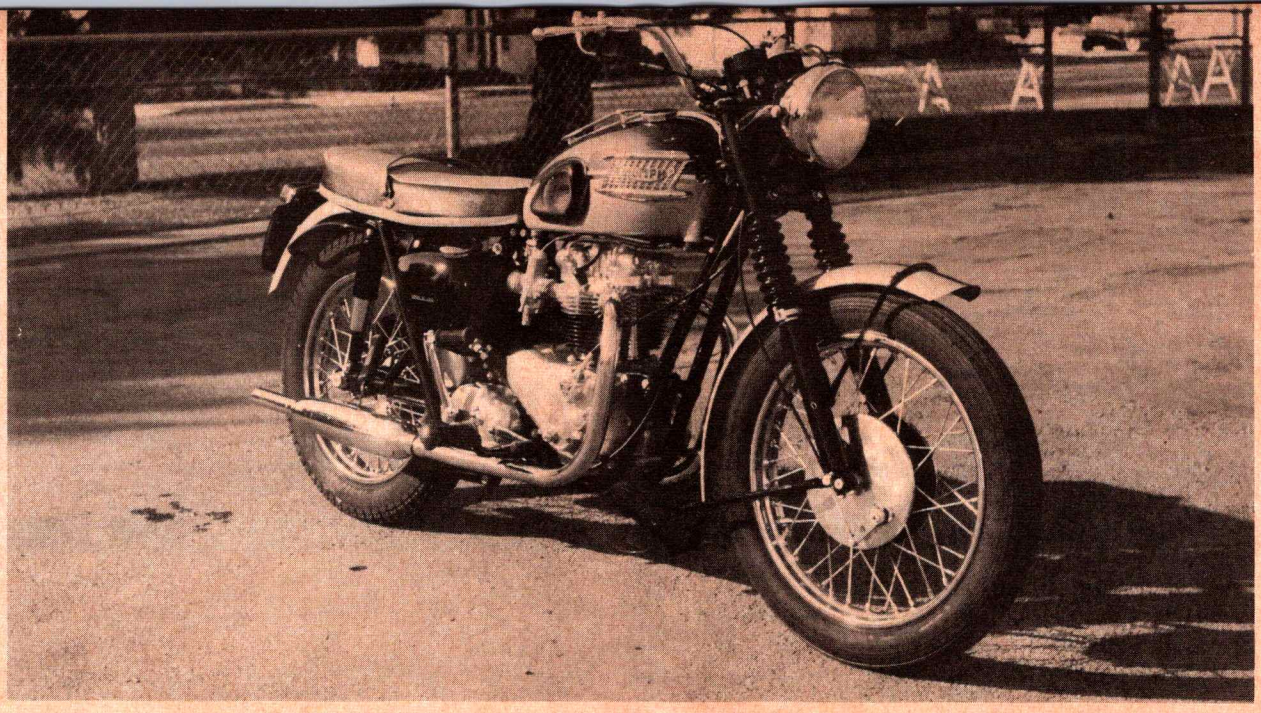
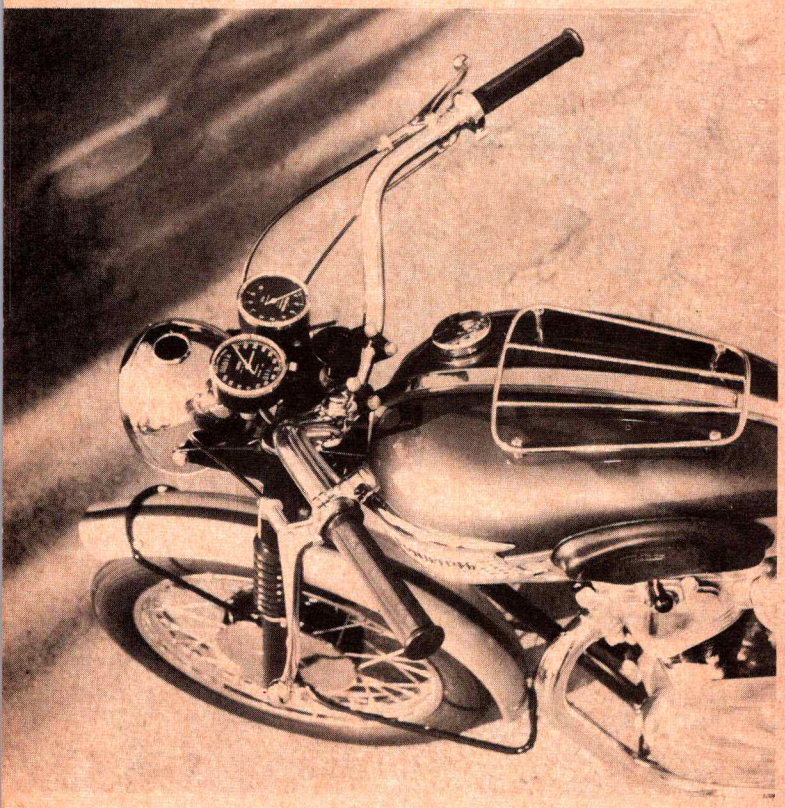


1962 TRIUMPH BONNEVILLE

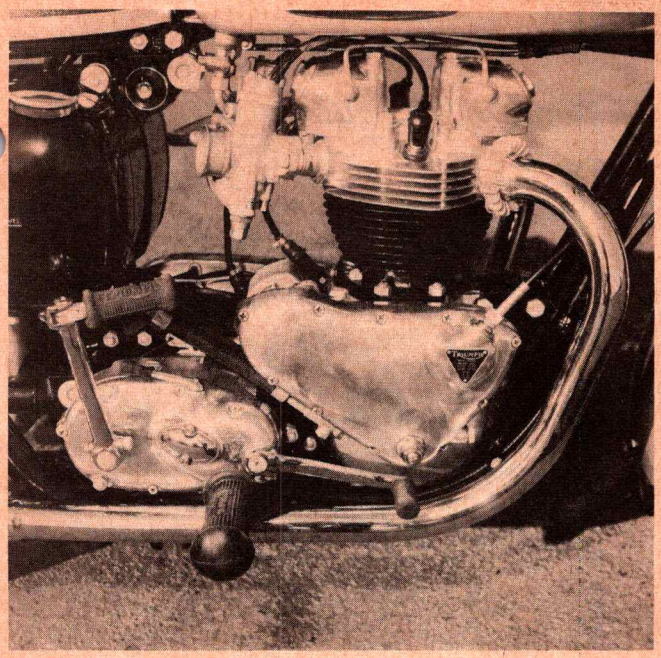


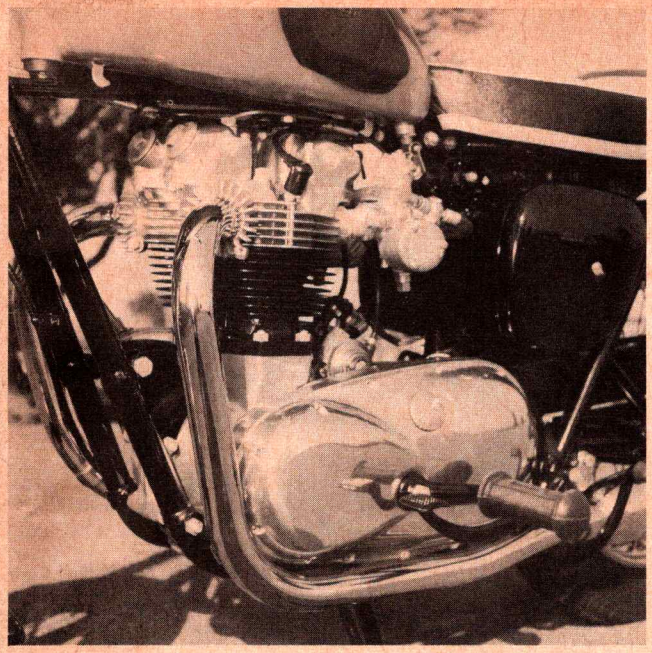
Cycle World Road Test

DESPITE the present-day trend toward small-displacement motorcycles, there is now and will very likely always be a sizable group of riders for whom nothing short of a genuine over-100-mph machine is ever enough. These are the people who really enjoy the heady thrust that only comes with relatively large, powerful engines. On the other hand, most of these men are experienced enough to recognize and appreciate the merits of light weight and compact overall dimensions, and they like to have these features as well. Not many years ago, to have both the power **and** agility was quite impossible, but progress — and the Triumph Motorcycle Company — has brought us a machine that possesses a surprisingly large measure of each: the Bonneville T120.

In its essentials, the new T120 is a very close development of preceding Triumph twins. The vertical-twin cylinder layout — which has proven, over the years, to be worth imitating — is naturally retained. The crankshaft still runs in two bearings (the one on the output side is of the roller type), and retains the large, central flywheel. The lack of a center mainbearing may be bothersome to a few, but constant detail improvement in the crank, its bearings and supporting structure has kept the engine's overall reliability well apace with the frequent increases in output.

At the top of the engine is the deep-breathing, splayed-port cylinder head, cast in light-alloy, like all of those in the rest of the Triumph line, and presenting quite an impressive companion piece to the two Amal monobloc carburetors. On our test machine, these used the conventional, integral float chambers — which now have an inter-connecting fuel-feed line, to permit the use of standard fuel taps in the reserve system. Available, too, for those who cannot be satisfied with the Bonneville's already staggering performance,





is an optional remote-float setup. This relieves the normal float chambers of their duties entirely, and overcomes a slight fuzziness at about 6800 rpm. This is caused by vibration-induced frothing in the stock float chambers and upsets the mixture a trifling amount at that particular engine speed. We were not overly concerned with the frothing problem, as the Triumph's performance was, to be absolutely honest, about as much as we could comfortably handle anyway.

As was the case on the engine, there was no faulting the workmanship on the rest of the machine. There are new colors for this year's — which were very attractive — and everything that could conceivably need to be polished or chromed had received the full treatment. As it goes almost without saying, the brightwork contributes nothing to performance, but it is invaluable in producing and maintaining pride of ownership, and we think that is certainly worth something.

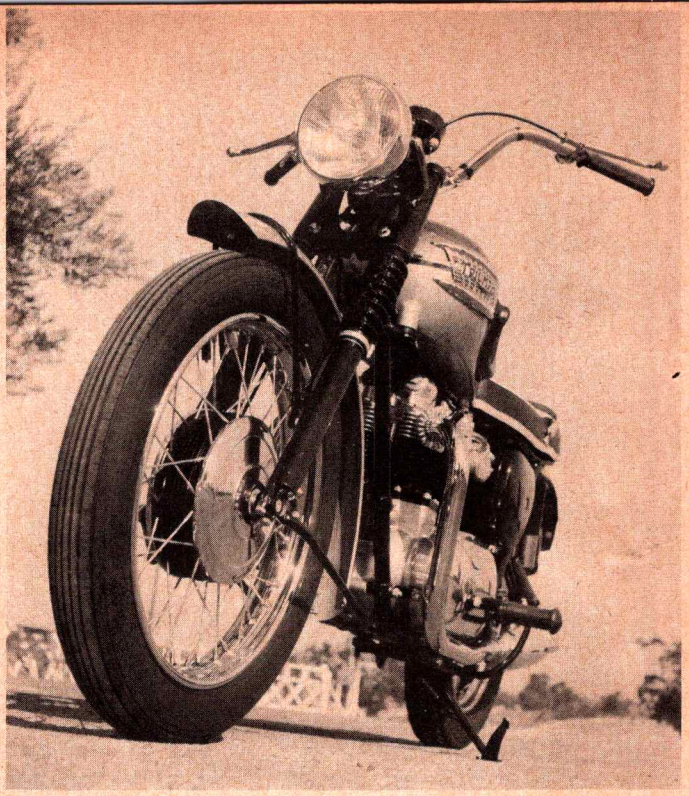
The Bonneville color scheme for 1962 really has "it." A reddish burnt-orange is used on the upper side of the fuel tank; and, on the lower side, less prominently, a medium-grey that contrasts just nicely. Both paints are of the metallic variety and are beautiful examples of the type. The metallic quality is not done so heavily that it pokes you in the eye; and yet, there is enough to give the finish that "inch-deep" look that is understandably so popular. The fenders are of the same grey as that used on the lower part of the tank; and, for trim, there is an inch-wide strip of the orange running down the middle. The final touch is provided by a thin line of gold on each side of the orange, separating it from the grey. In overall appearance, the finish hovers somewhere between studied elegance and eye-catching flash — you can just take your pick.

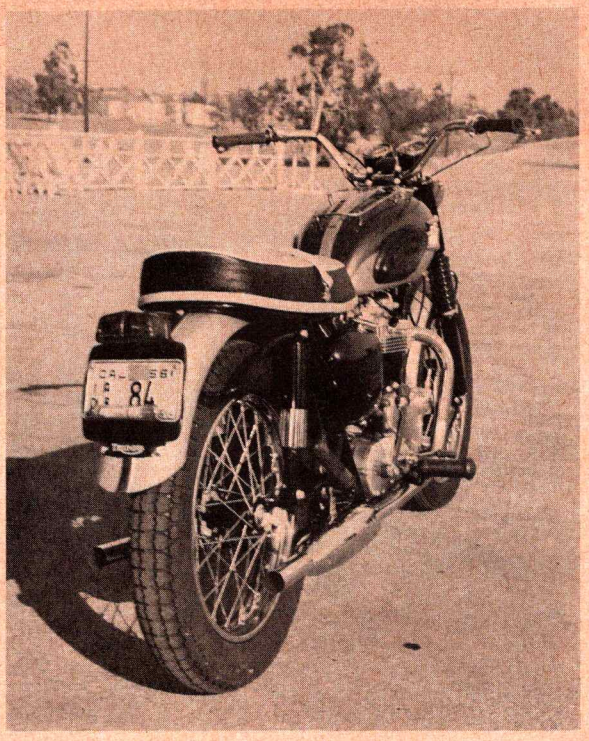
The T120 frame and suspension system follows the pattern that has become a standard. There is a two-loop tubular frame cradling the engine and transmission (this last item having dual adjusters) and carrying telescoping, oil-damped forks at the front and trailing links astern. The combination spring-damper units at the rear are, as is usually the case, adjustable and can be set to whatever the load carried requires. We might mention that the springing suited us exactly: Stiff enough to help the rider in maintaining control throughout the Bonneville's considerable speed range, and yet well short of harshness.

During the time we had the T120, it started with heartening ease. There was no provision for choking — beyond the usual float "ticklers" — but a mild pre-flooding would get the engine fired up quickly every time. It starts easily despite the engineering pitfall inherent in having 50 bhp from 40 cubic inches. And, although the idle was a bit lumpy (as one might well expect) there was no problem with those embarrassing mid-intersection "conk-outs". The engine further belied its high power output by its uncommon willingness to idle-down in 4th and plug along at low speeds. From about 2000 rpm, in 4th, one can just crank it on; and, as long as too much throttle is not given until the speed builds up, the T120 will pull smoothly away. Not only that, but with even our fairly bulky test rider aboard and sitting bolt-upright, this remarkable machine would easily push past the 100 mph mark and run steadily at that velocity as though it would never tire.

More vigorous techniques had their effect, too, make no mistake about that. Using 7000 rpm as a shifting point, we were able to snatch the T120 up to a bit over 85 mph in the standing 1/4-mile, and with an elapsed time of 14.5 seconds. Inasmuch as our test rider spent a sizeable portion of the "quarter" fighting to keep the front wheel down and the machine pointed, we are of the opinion that a really top-flight rider might best even that excellent time. Certainly, the bike itself was willing enough.

The clutch engages without any of that distressing suddenness sometimes found in powerful motorcycles, and when "all-in" showed no trace of slippage. The only difficulty was one we rather liked: the Triumph has so much power that it creates something of a situation when the rider is trying for all-out performance from a standing start. Given sufficient time to completely familiar-





ize ourselves with this vast and unaccustomed surplus of power, we could have done our tests with less fuss — but it probably wouldn't have been as much fun.

Apart from this necessity for adjusting to the great amount of power on tap, the rest of the test mileage was covered without incident. Moreover, the miles were also traveled in great comfort. The Triumph is agile, as we previously intimated, and the saddle — besides looking good—was comfortable. We were delighted, too, to find that the positioning of the pegs, relative to the saddle and the bars, enables one to assume a variety of riding positions without getting that out-of-balance sensation. On an extended trip, a seemingly minor point such as this assumes very important proportions.

Other important "minor" points were well cared for, too. Vibration is always something of a problem where motorcycles are concerned, and on the T120 vibration-damping rubber mounts are used extensively. Most noticeable of the rubber mountings was the fuel tank, which is really cradled in the stuff, and on the instruments. Nothing is more exasperating than having fine, accurate instruments (and the Bonneville's chronometric speedo and tach qualify as such) that vibrate so badly that they cannot be read. In the case of the Bonneville, this is prevented by having the instruments fixed on rubber biscuits.

To be absolutely accurate, though, there wasn't much vibration to worry about. We did a lot of just plain medium-speed road cruising; and, at 60-70 mph, the rider is almost as comfortable and unshaken as if he were sitting at home — and he's having a much better time. The saddle is broad and soft (enough for two) and the springing is, as we said, just the thing. And, there is a lot of mental comfort, while passing cars, in knowing that hooking on a big handful of throttle will ram you ahead like something going into orbit.

Touring through winding mountain roads, and feeling perhaps too much like the legendary John Surtees for our own continued well-being, we tried a bit of what the British call "ear-holing". As one might guess, this involves leaning into the corners at such speed and with such purpose that one's ear-hole does, in fact, get down pretty near the pavement. Thus engaged, a good idea of the T120's handling soon emerged, and it is for the most part very impressive. Only on fast, cambered bends, where the added loads imposed by centrifugal force begin to overwork the suspension did anything unsettling develop. There, particularly when the road turned choppy, the suspension damping was to some extent overcome, and the bike would feel a trifle uncertain. However, this may be said of most road bikes, for one cannot have a touring ride and Grand Prix-caliber cornering all in the same machine.

Stopping is important, too, and the Triumph's capabilities in that area were equal to its performance. The brakes are not overly large, compared to some we have seen recently, but there is no doubt that they do the job. The floating-shoe brakes introduced last year are continued on the new model and the actuating system (the cable and housing, specifically) has been improved to eliminate the faint springiness present previously. The same treatment has been accorded the clutch, with the result that those handle-bar levers now feel more positively linked to their respective components than before.

There are other minor changes, such as the revised fuel taps now being used; and the electrical system has been revised to meet the specific requirements of each model in the Triumph line—the T120 being no exception. All in all, though, the Bonneville for 1962 is the same machine as before: extremely fast and yet docile, and as desirable a performance package as it has ever been our pleasure to ride.

TRIUMPH

PERFORMANCE

Top speed, average	108
best run	110
Max. speed in gears (7000 rpm)	
3rd	94
2nd	66
1st	46
Fuel consumption range, mpg	40/70
Mph per 1000 rpm	16.0

SPEEDOMETER ERROR

30 mph, actual	29.0
50	47.7
70	65.6
90	83.8

ACCELERATION

0-30 mph, sec.	1.9
0-40	3.0
0-50	5.1
0-60	6.5
0-70	9.1
0-80	12.2
9-90	17.0
0-100	27.0
Standing 1/4 mile	14.5
speed reached	85

SPECIFICATIONS

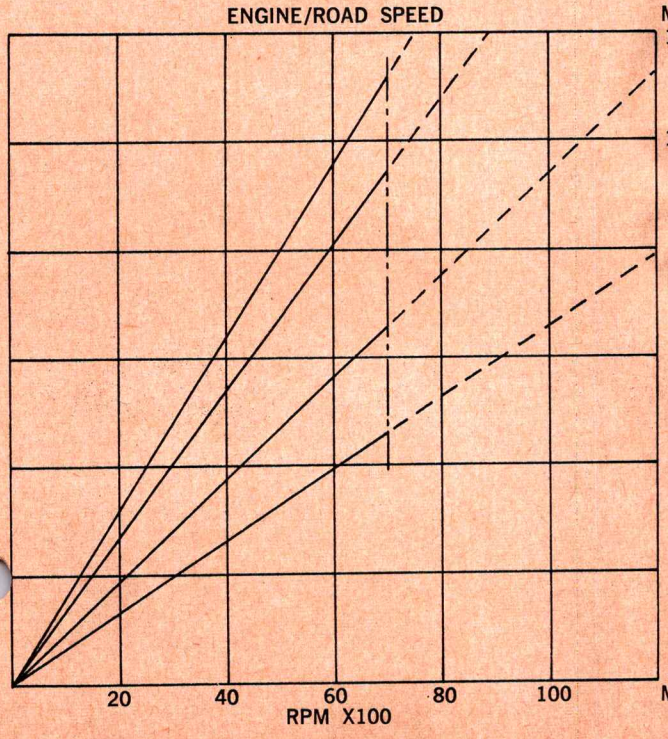
List price	$1,139.00 F.O.B., P.O.E.
Frame type	tubular, 2- loop
Suspension, front	telescopic fork
Suspension rear	trailing links
Tire size, front	3.25-19
Tire size, rear	4.00-18
Brake lining area, sq. in.	32.5
Engine type	vert. twin
Bore & stroke	2.79 x 3.23
Displacement, cu. in.	36.5
Displacement, cu. cent	649
Compression ratio	8.5:1
Carburetion	(2) 1 1/16 Amal monobloc
Ignition	Lucas Magneto
Bhp @ rpm	50 @ 6500
Fuel capacity, gals.	3.5
Oil capacity, pts.	6.0
Oil system	dry sump
Starting system	kick, folding crank

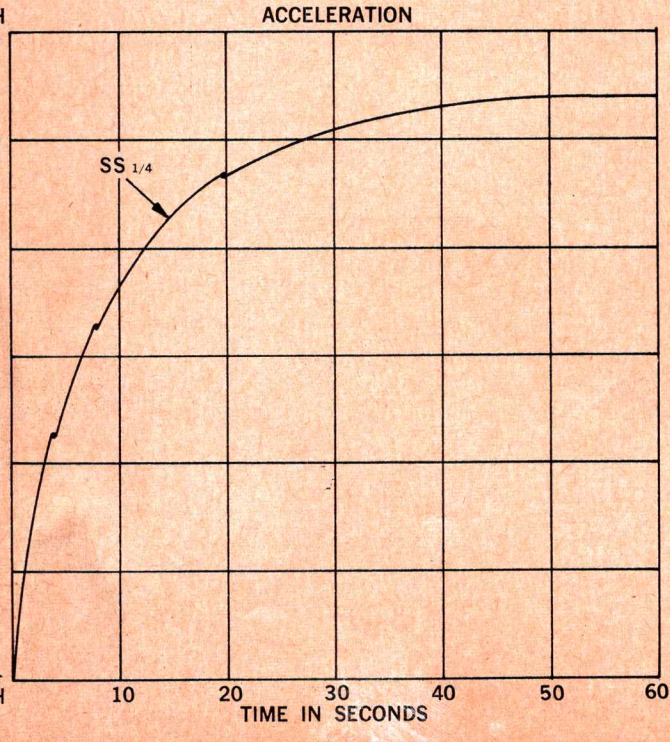
POWER TRANSMISSION

Clutch type	multi-disc, oil-bath
Primary drive	single-row chain
Final drive	single-row chain
Gear ratios, overall:1	
4th	4.9
3rd	5.8
2nd	8.3
1st	11.9

DIMENSIONS, IN.

Wheelbase	55.2
Saddle height	31.5
Foot-peg height	11.5
Ground clearance	5.0
Saddle width, max.	11.0
Curb weight, lbs.	410





RIDER IMPRESSION OF THE HONDA 4

By Ed Kretz Jr.

PHOTOS BY AL PALACY

NOTES ABOUT THE AUTHOR

A more famous father and son team than Ed Kretz Senior and Junior would be impossible to find in the annals of American motorcycle racing. Ed Sr., winner of practically every AMA National Championship race at one time or another (including the first Laconia and the first Daytona), held the coveted #1 number plate shortly before World War II and was also voted Most Popular Rider in a nationwide contest. Kretz Sr. is the only man to win the Langhorne (Pa.) 100-mile National four times, and even after his retirement he came back, in 1953, to compete in a 100-lap TT race at Carrell Speedway, Gardena, Calif., defeating a stellar field that included Joe Leonard, then gunning for his first National Championship. Eddie Kretz Jr. roared onto the racing scene in 1949, and in 1950 won the 50-mile AMA Amateur National at Laconia. N.H. Since that time he has constantly been in the thick of things on flattrack, TT and road race courses. In addition to racing at Daytona, Langhorne, Springfield, Dodge City, Sturgis, S.D., DuQuoin and Milwaukee, Eddie's familiar national number 33 has been in contention at countless California events and he took home the much sought-after California State TT Championship in 1952. Now concerned primarily with road racing, Eddie brings years of experience and know-how to his current interest and his vast knowledge lends pertinence to the following comments.

In over twenty years of riding almost every type of motorcycle in the world I have never ridden anything like the fantastic Honda "Four." I have been racing bikes for approximately fourteen years and have ridden many makes of machines of many different engine sizes, from 200cc all the way up to the big 750cc jobs. This 250cc, four cylinder screamer gave me a thrill and a sense of satisfaction that many a larger bike has not.

The terrific acceleration, the superb ease of handling, lack of vibration, wonderful brakes and smooth shifting of the six-speed gear box all combine to make this one of the most exciting motorcycles I have ever ridden.

The lack of vibration is almost unbelievable. The slightest flick of the throttle makes the little powerhouse wind up to 11,000 rpm, yet even when operating at peak rpms of 14,000 you can lay your hand on the gas tank and not feel the slightest quiver of this amazing engine.

In road racing, with all the curves and turns, a good handling machine takes a lot of the strain off the rider. The "Four" handles so smoothly that you feel as though it were actually a part of you. It follows the course you put it on with the merest touch of the controls and there is never a tendency to drift, waver or wobble.

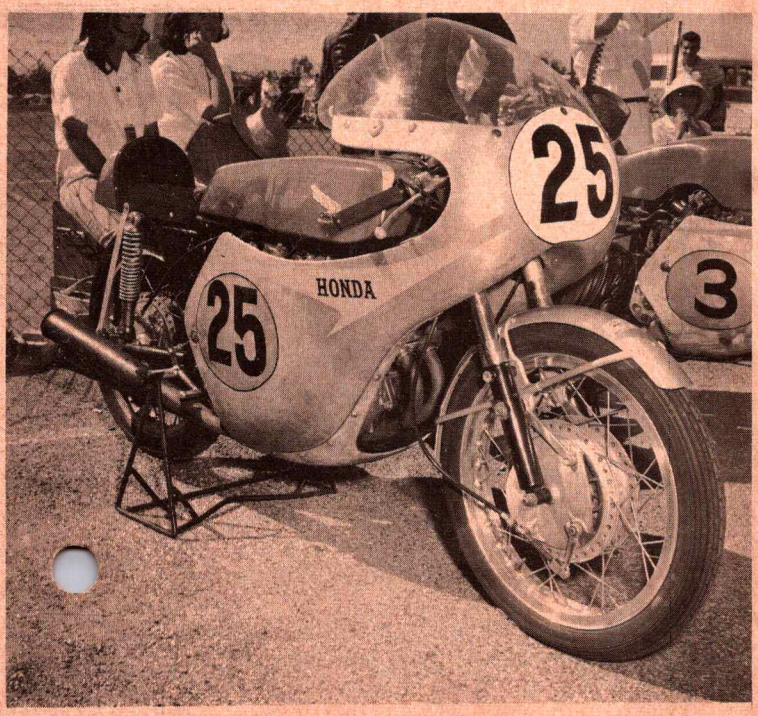
With 50 horsepower on call at all times, the smallest crack of the throttle produces an immediate surge of power. On a high revving little job like this you have to watch the tachometer constantly to keep track of which gear you are in. The marvelous six-speed gear box is used strictly in conjunction with the tach. With six speeds to choose from the many twists and turns of a road racing course become easy to cope with as you are almost certain to have the right gear for maximum performance on each separate section of the circuit.

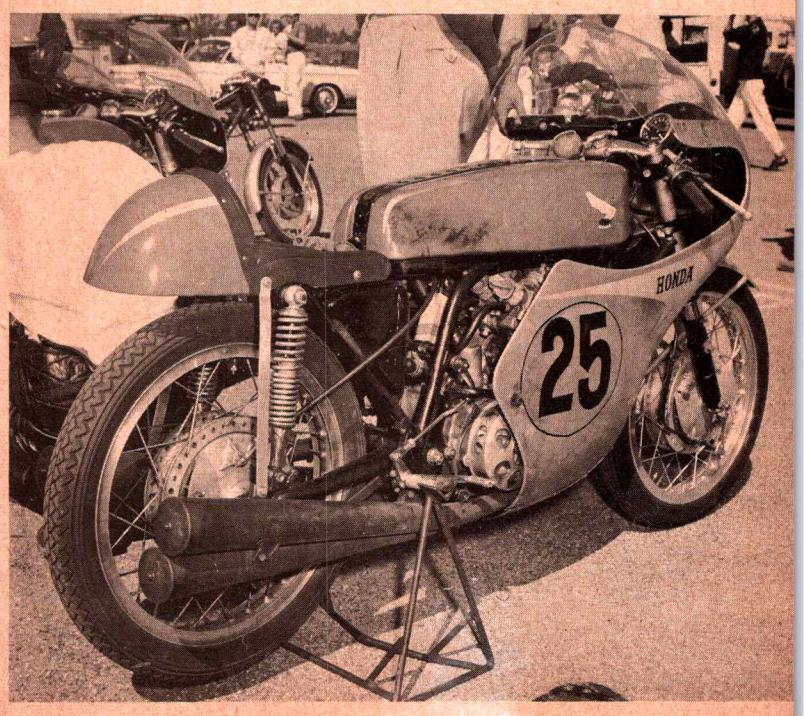
On a particularly crooked course you are constantly changing gears but the rider with six to work with has a large advantage over the riders with only four gears to employ.

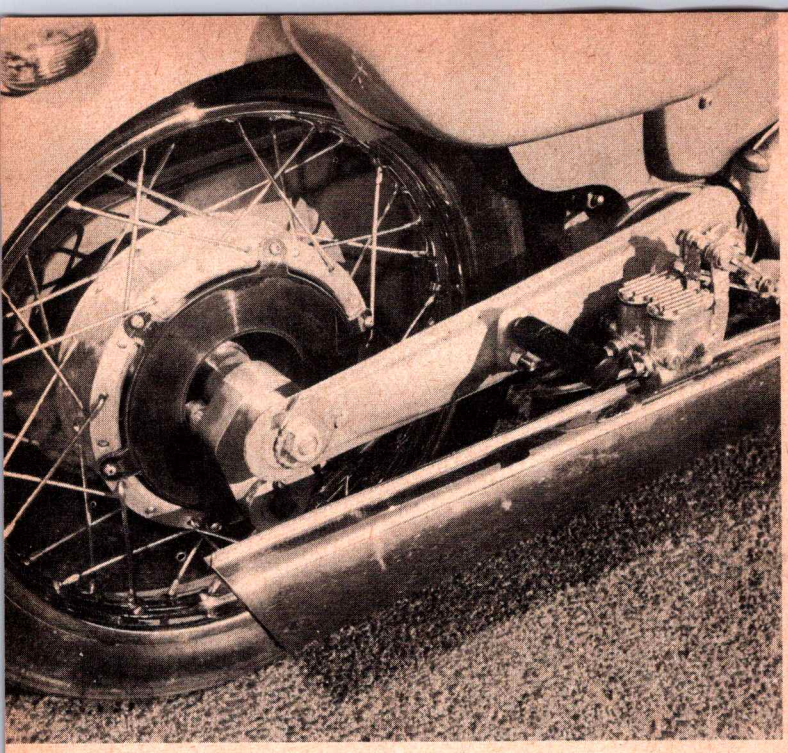
In road racing, brakes are a most important feature. The Honda "Four" has excellent brakes; the ease of application and the quick response of each brake, front and rear, is near perfect. Used separately or simultaneously they are all that any rider could ask for. They never fade, pull, grab or stick. The secure feeling they impart helps to make the "Four' a genuine pleasure to race.

Ed Kretz Jr. in turn 6 at Riverside International Raceway. Shortly after this photo was taken he went out of the race. Riding the same machine in a later race at Las Vegas Kretz pulled a clean sweep in all events.

Two views of the fantastic four-cylinder, 50 hp Honda grand prix machine that Ed Kretz Jr. writes about in this rider impression. The bike seen here is the one John McLaughlin rode both at the Riverside Raceway and the recent U.S.M.C. Grand Prix at Rosamond.







Airheart Products' prototype hydraulic disc brake unit, mounted on a 95cc Pointer Lassie.

DISC BRAKES FOR MOTORCYCLES

Airheart Engineering's experiments with their Indy winning type brake may prove to be the coming thing for motorcycles.

Airheart Products Inc., in Van Nuys, California, is presently conducting experiments with an application of their well-known Indianapolis car-type hydraulic disc brakes on a pair of bikes furnished by the Shin Meiwa Industries Co. Ltd., of Tokyo, Japan. The two machines, one of which is shown on this page, are Pointers. One is a 90cc Lassie, the other a 125cc Senior.

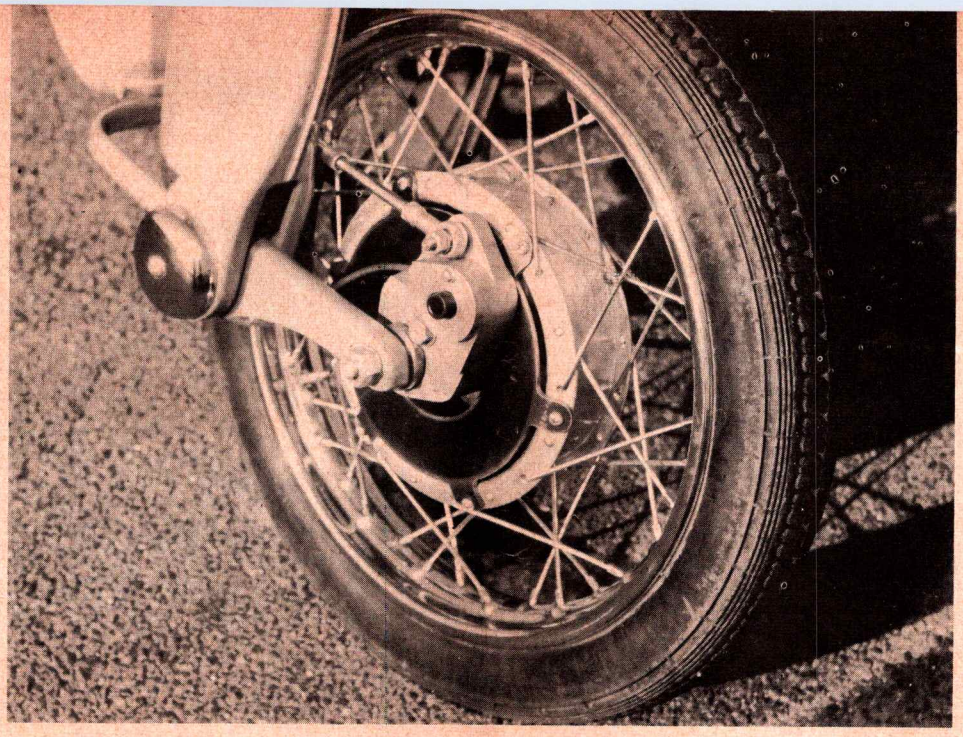
Airheart's Design Engineer, Ed Lowe, told CYCLE WORLD's Editor that the brakes had exceeded the requirements sent to them by Shin Meiwa by a considerable margin and that they are quite satisfied with the installation, as well they should be. The only major changes made to the stock motorcycles were special front and rear wheel hubs with wheel spokes re-strung in order to mount the specially made brake discs.

The Airheart firm, pioneers in the manufacturing of disc brakes for aircraft, have applied their ingenious actuator unit, the core of the brake, successfully to cars and most recently to karts. Though the master cylinders used in the bike installations utilize the kart units, the rest of the assembly was specially made and consists of special discs, caliper housings and a new type 3-1/6" diameter nylon hydraulic hose. The brakes are adjusted via a clever linkage system that applies equal pressure to both wheels when the foot brake lever is used. The linkage is also tied to the hand lever on the handlebars which stop the rear wheel only and is designed for use as a holding brake.

CYCLE WORLD's editor was given the privilege of riding the hydraulic disc brake-equipped Pointer Lassie and after several hours of severe and varied brake applications came back with the firm conviction that disc brakes have a great deal to offer for motorcycles. One almost eerie factor in favor of this type of brake is its ability to apply equal and simultaneous braking effort to both wheels. Full pressure panic stops from 35 mph produced a straight line, controlled skid.

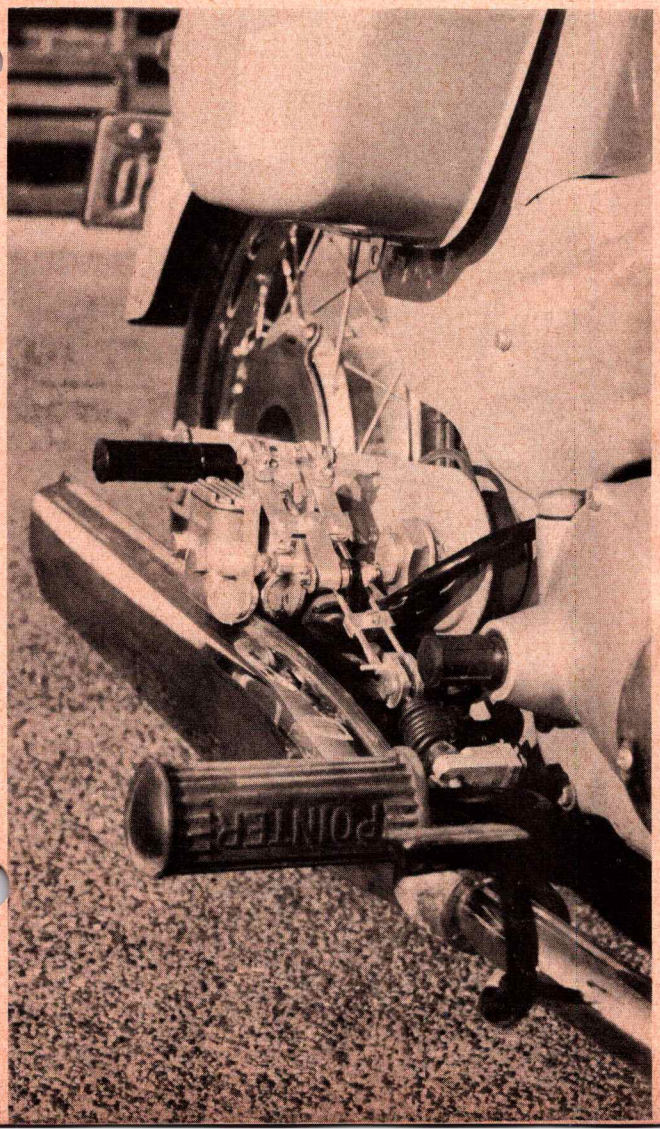
A near-future issue of CYCLE WORLD will feature a complete test and evaluation of Airheart's installation on the 125cc Pointer Senior. The brief test on the little auto-scooter proved several rather startling facts. One we have already mentioned; another is the ease of application. In order to lock the wheels up solidly a huge amount of pressure is required, making it almost impossible in normal use to lose control in an emergency stop. Another factor is the yet-to-be-explored value of having both wheels braking simultaneously, although the value of stopping, whether normally or under emergency conditions, in a straight line is an obvious one. What occurs on slippery and irregular surfaces is yet to be explored, through brief excursions through a large puddle of water in a parking lot showed no difficulties. Further tests on pebbly and slippery surfaces will be conducted by CW's technical staff and the results published.

If the brake units are accepted the Shin Meiwa Co. will make and install the units under an Airheart license.

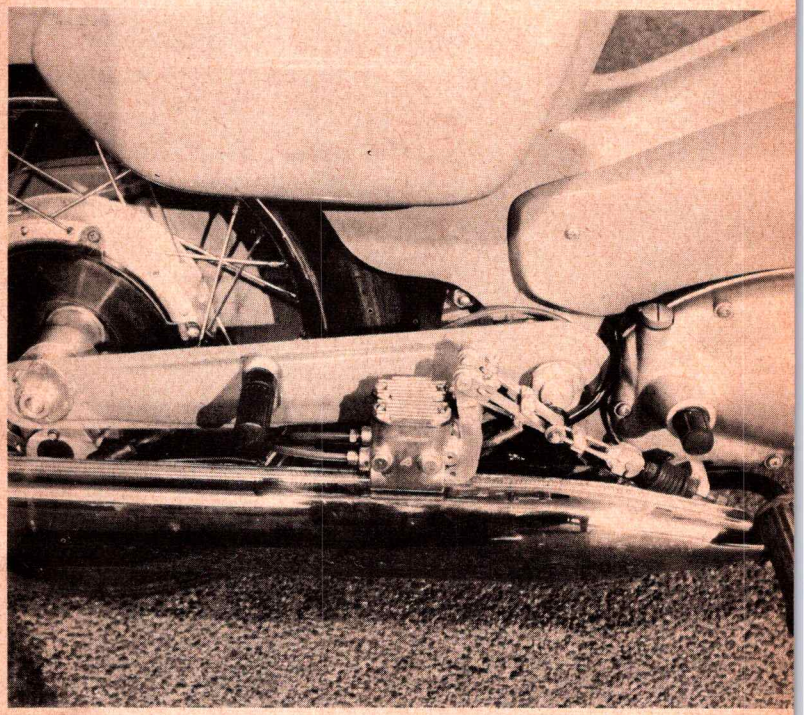


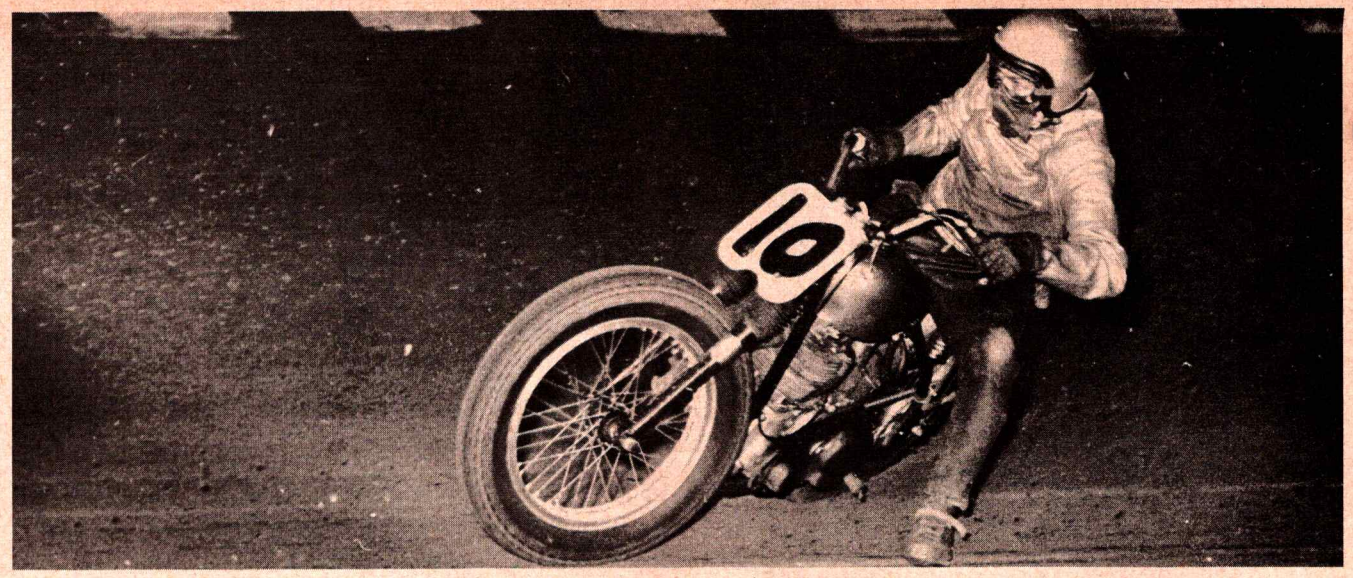
Front brake disc installation of the Airheart unit. The lever running to the rear is a torque link.

Two tiny kart hydraulic master cylinders work in tandem; clever linkage system can be seen.

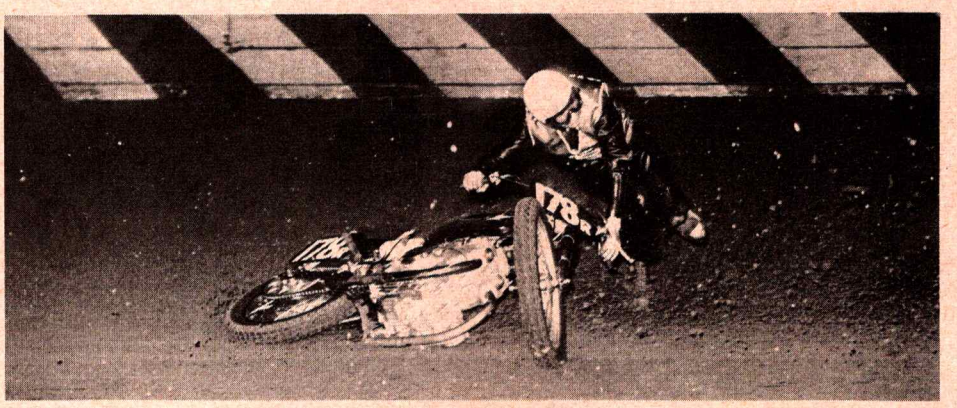


On rear brake installation, special wheel hubs were made to accept hydraulically actuated brake unit.

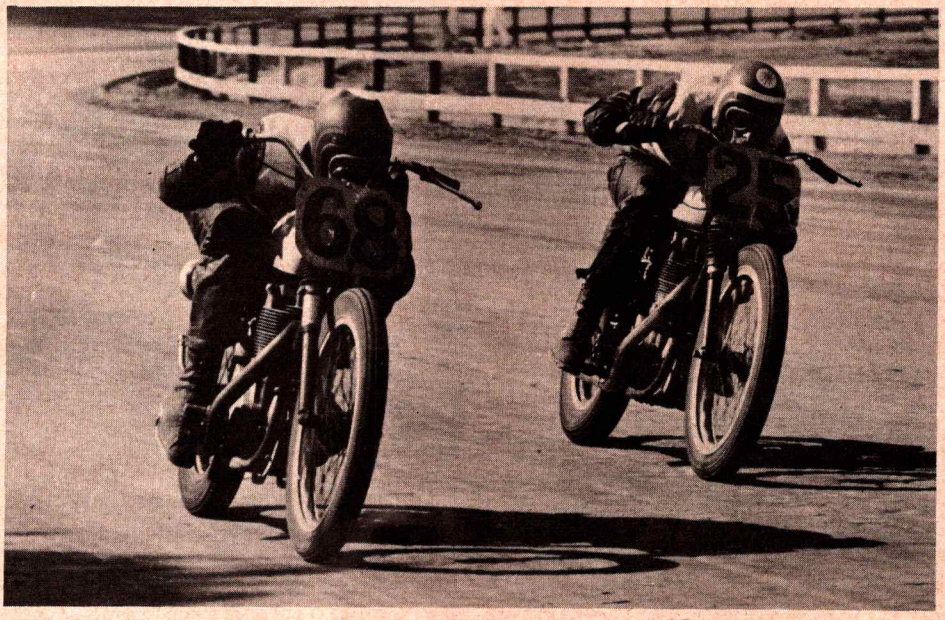




Neil Keen sewed up national half-mile championship by a wide margin over fellow BSA riders Stu Morley and Al Gunter.



Still holding on, though airborne, Dickie Newell checks for oncoming riders. Newell was practically unbeatable on his Honda after novices switched to 250s.



Preston Petty (68y) and Jimmy Plain (25y) waged many a bitter duel in the amateur division, will give the experts a run for their money in '62.

WEST COAST TRACK RACING SEASON

BY CAROL ANDERSON PHOTOS BY WALT MAHONY

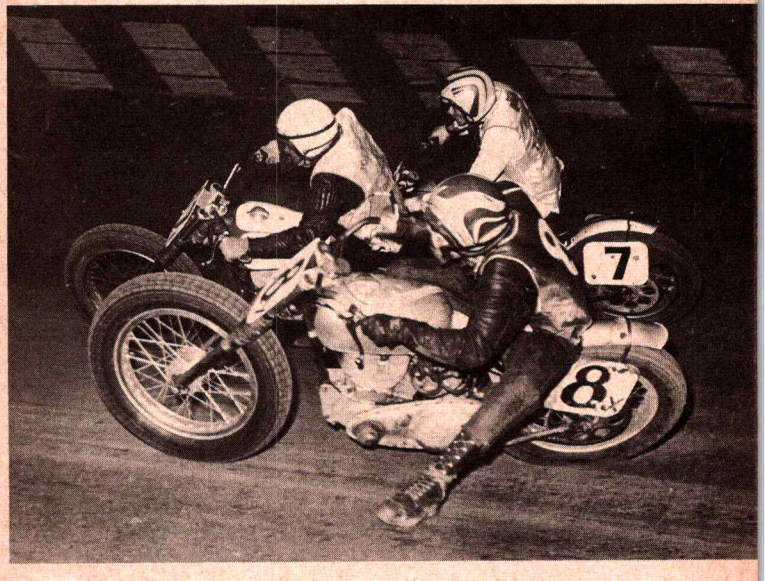
Sliding' Al Gunter cranked it on, held it there and capped a late-season win streak by nabbing the 20-lap Season Championship race at Ascot Park aboard his potent BSA. Triumph-mounted Sammy Tanner took home second place money, closely followed by the year's high point half-miler, Neil Keen, and rapid runnerup Stuart Morley, both on BSA's. Gunter also clocked fastest qualifying time of the evening — a speedy 23.54.

Championship Night climaxed the most successful Southern California racing season in history, with only one rainout marring promoter J. C. Agajanian's otherwise weather-perfect 50 race meet schedule.

Topping off three pre-season steeplechase events at Ascot Park in Gardena was the 1st Annual Jimmy Phillips 100-lap Memorial, and TT champ Dick Dorresteyn wheeled his Triumph Bonneville around the demanding 8-turn course to an easy win, pocketing a substantial share of the $3,600 payoff.

Weekly flattrack races at Ascot began the first Friday night in April. Warm weather and good crowds brought entries to record level, with frequent appearances by Northern California and out-of-state riders.

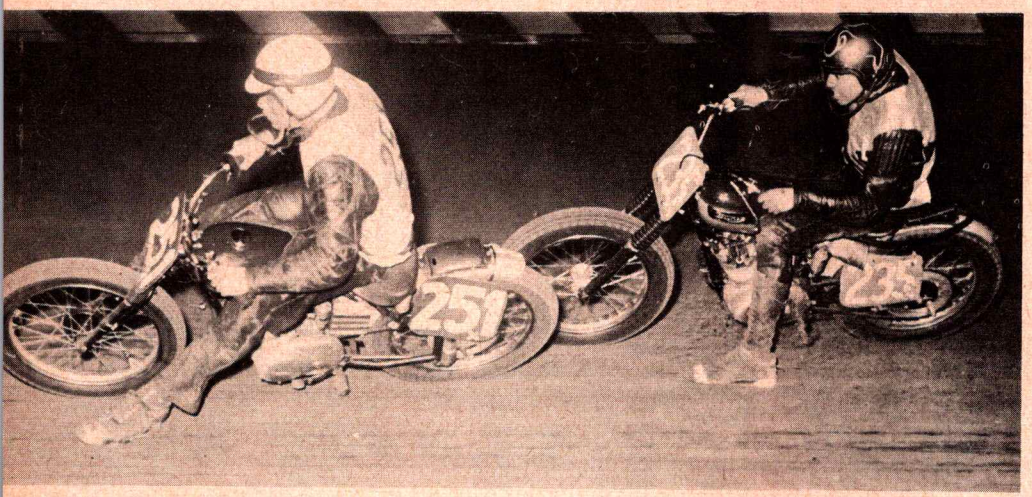
An aptly-tabbed "BSA Wrecking Crew" (Neil Keen, Stuart Morley, Al Gunter and Jack O'Brien) dominated the winner's



Winner of three National Championships this year and runnerup to Resweber for Grand National title, #98 Joe Leonard has his leathers polished by #24 Jack O'Brien's front wheel as #6 Don Hawley closes in. All three ride Harley-Davidson.

BSA flash Stuart Morley takes the low groove and powers through Ascot's south turn in close company with rapid first year expert #17 Dick Hammer (H-D) and #7 Sammy "Flying Flea" Tanner (Tri.).

What's wrong with this picture? No, you are not seeing double — there's only one national number 5 and that's Johnny Gibson. But during a practice session at the Sacramento one-mile track Don Hawley leaped on Gibson's half-mile machine and the end result was this startling "double exposure".



Ron Nelson (251x) and Clyde Litch (235x) tied for novice season championship, received identical high point trophies.

Neil (Peaches) Keen holds an armload of his favorite fruit in one arm and "Miss Checker" in the other as he receives congratulations and high point trophy from Promoter J. C. Agajanian.

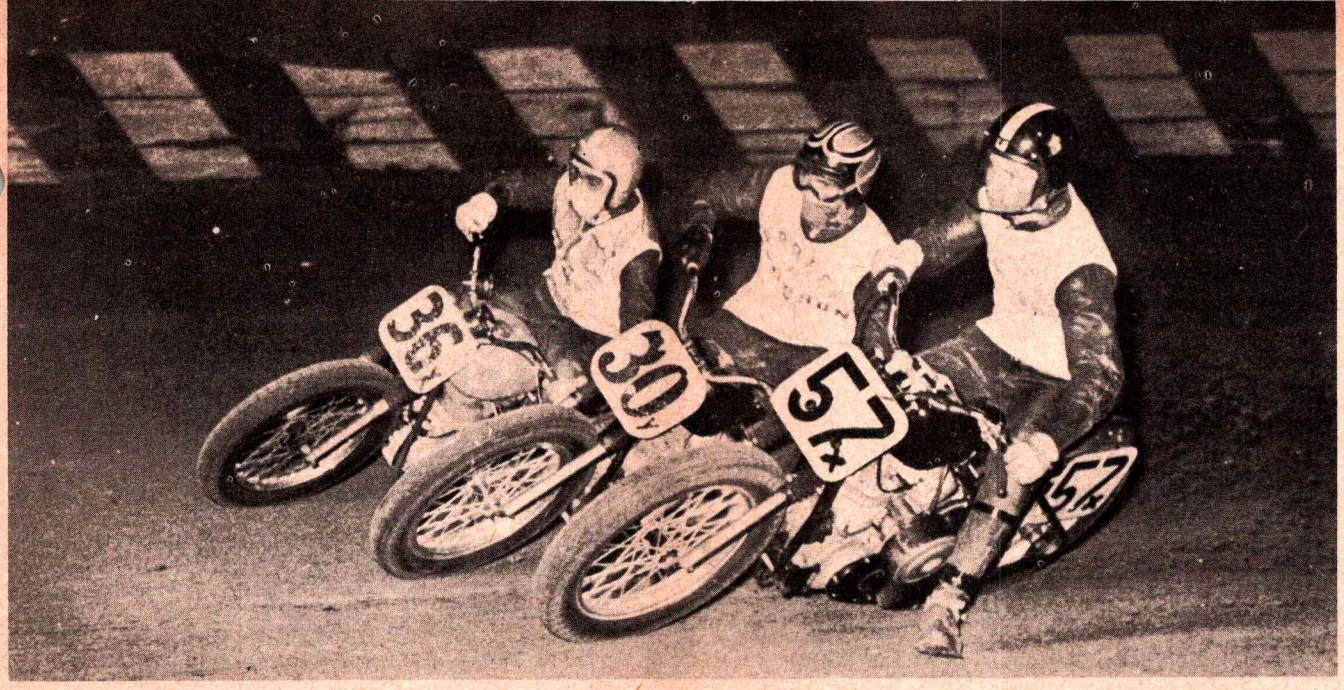
circle all season long; only Triumph-mounted California State Champ Sammy Tanner slipped through to upset their victory record over the well-prepared dirt half-mile oval. Ever-persistent veteran riders Johnny Gibson and Joe Leonard comprised the Harley-Davidson contingent, with Dick Hammer switching to H-D late in the year. Don Hawley, never to be discounted, rode everything from Harley to Royal Enfield in his usual determined fashion and two first year experts, Blackie Bruce (H-D) and Roger Reinl (Tri.), were outstanding in their initial jousts with the "big boys."

Midsummer brought competition to a fevered pitch as AMA National Championships and night TT's kept mechanics and riders on the go. Neil Keen lived up to his full throttle reputation by winning the 8-mile National Championship from last place after a wheel-to-hub battle with Carroll Resweber, national number one. Resweber surprised the railbirds by leading the field for many laps on his rapid Harley-Davidson and finishing second to the favored Keen before a sellout crowd.

Darrel Dovel showed the fight that Texas is famed for and wound up third with his Triumph in showroom condition.

Amateur National honors went to Preston Petty over fast-rising fellow BSA rider, Jimmy Plain of El Sobrante. Plain, a running mate of Dick Dorresteyn, placed well in half-mile events in addition to taking home (along with Dorresteyn and Dick Mann) a goodly share of TT money.

Close-matched amateur races were real crowd pleasers and many of the top riders will undoubtedly swell expert ranks in 1962, including Bob Anderson (BSA), Bob Skibsted (H-D), Bob Souza (BSA) and Bennie Sims. Sims, #51m from Al-



Graphic proof of closely-matched events is this beautiful shot of #36x Bob Souza (BSA), #30y Ron Boyarsky (H-D) and high point scorer, #57x Bob Skibsted (H-D).

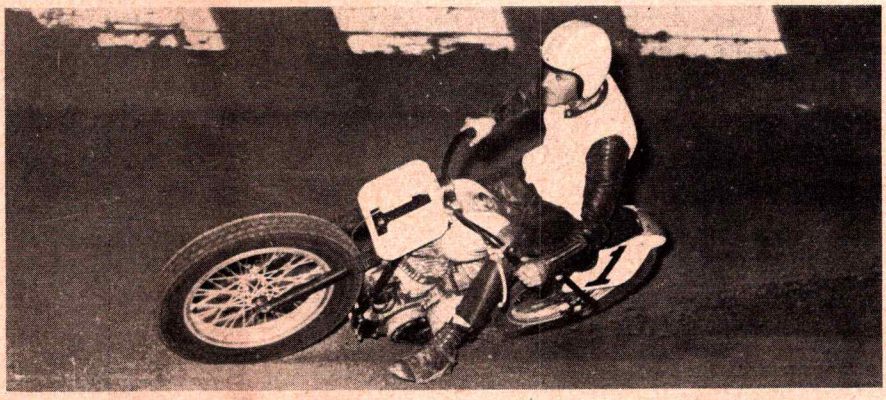
buquerque, New Mexico, startled his competition on more than one occasion by roaring to the front on his speedy, self-tuned Matchless, and definitely bears watching.

Novice riders ushered in a new era of motorcycling and introduced distinctive sounds to the speedway with their 250cc machines. The 250cc ruling, put into effect by the AMA to combat a serious accident problem, brought renewed novice interest and a wide variety of equipment to Ascot Park. Lightweight bikes were equipped with brakes, adding to safety measures already enforced.

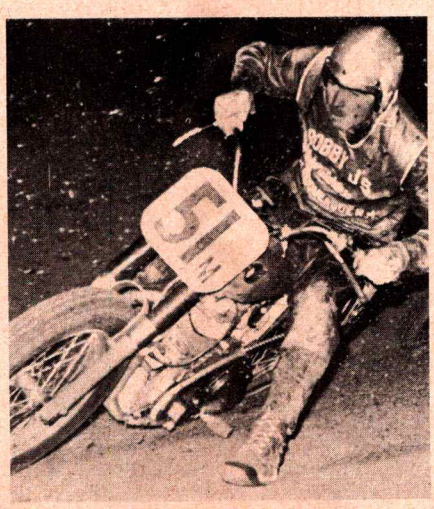
Early season novice winner Duane Shadley (H-D) returned to midwest racing during the summer and Ron Nelson (Tri.) took over number one position, coming up to near-expert form as the year progressed. A favorite with fans was Bakersfield's Jeff Sperry, who sported a pair of realistic "Mighty Mouse" ears atop his helmet, and Dickie Newell's Honda was practically unbeatable after the switch to 250's.

Near-capacity crowds enjoyed Ascot's night TT events, with improved lighting, grassed areas and construction of two infield lakes (complete with palm trees) adding to the overall color. Dick Hammer and Dorresteyn held a monopoly on expert main event victories while Plain and "The Flying Dutchman," Skip Van Leeuwen, battled it out for amateur honors.

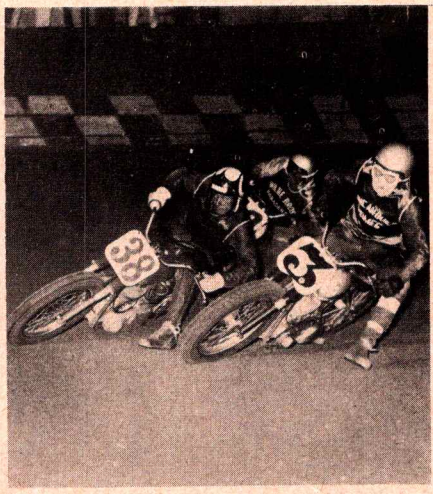
Under the progressive promotion of J. C. Agajanian and the vigilant direction of District 37 AMA Referee Bert Brundage, 1962 offers promise of an even better season with more National Championships and added Class A lightweight races slated to satisfy the appetites of riders and enthusiasts alike.



National number one, Carroll Resweber, led the 8-Mile National for many laps on his powerful H-D, eventually finished second to BSA-mounted Neil Keen after a thrilling battle.



Matchless with muscle—that's the story of Bennie Sims' self-built and surprisingly rapid flattrack machine. Sims, amateur #51m from Albuquerque, N.M., finished in Ascot top ten, advances to expert ranks in '62.



Outstanding first-year expert Blackie Bruce (38x) withstands the fierce pressure applied by Neil Keen and Al Gunter.

Intake and Exhaust RAM TUNING

BY GORDON H. JENNINGS

The designers and builders of engines for racing cars do a very creditable job, generally, and can usually be relied upon to get at least twice as much power from their creations as would be expected of ordinary passenger-car engines. However, despite the fact that they have long had the benefit of relatively enormous resources, they have yet to come even close to the accomplishments of their opposite numbers in the motorcycle world. Any racing *car* blessed with, let us say, 1.5 to 1.9 brake horsepower per cubic inch is regarded as a very hot contender indeed. And the very best of the current crop of four-wheelers — the World's Championship-winning Ferrari — can boast of no more than 2.0 bhp/cu. in. By sharp contrast, any grand prix-caliber motorcycle engine producing *less* than two bhp/cu. in. is considered to be rather "small-potatoes" by people close to the racing scene. Certainly, it takes much more these days to win any of the strongly-contested grand prix motorcycle races. This year's front runners all have approximately 2.3 to 2.4 bhp/cu. in. There is one radical 2-stroke at the 2.7 level and the all-conquering Honda fours are reportedly developing an awesome 50 bhp from their 15 cubic inches. This places the Honda at the absolute pinnacle for unsupercharged piston-type engines with an incredible 3.3 bhp/cu. in. To place this achievement in its proper perspective consider this fact for a moment: If the famous Indianapolis "Offy" could match the Honda on the basis of specific power output, it would produce no less than 840 bhp!

This margin of superiority is just about as marked when we compare the mass-produced examples of two- and four-wheelers. The best the automotive world has to offer is at just about the same level as the average for motorcycles. In the past couple of years the gap has been closing slightly — due to the efforts of some of the more daring automobile engine designers — but from all of the evidence, we would guess that the difference will be there for a long time to come.

The reasons for this are as varied and complex as the engines themselves, but there is one phase of design where the motorcycle engineers have demonstrated a clear-cut superiority. This is in the use of "ram-tuning," and it is likely that much of their overall advantage is gained by the successful application of this difficult technique. It is, therefore, in the best interest of the individual who likes to tinker for speed (and don't we all) to have at least a slight working knowledge of ram-tuning.

The layman, if he ever thinks about the matter at all, usually forms the notion that the air flow into and the exhaust flow from an engine is quite steady; greater in volume at higher engine speeds but steady nonetheless. Nothing could be farther from the truth. In point of fact, both the intake and exhaust flow passes through the engine in a series of pulses, varying substantially in both pressure and velocity. This is widely considered by automotive engineers to be a real curse, as all passages must be made large enough to carry the peak flow without too much restriction — and yet not be so large that gas velocity (in the case of the induction tract) will fall too low and allow the fuel to precipitate out of the air.

For the serious, and knowledgeable, "hop-up artist" these pulses represent something to be put to work, and with the right selection of intake and exhaust plumbing, and the proper camshaft, there have been instances where the power output of an engine has been raised 30% over its original "un-tuned" form. For the sake of simplicity and clarity we shall confine our discussion to the single-cylinder engine; the lessons learned with the single are readily applicable to multi's and it makes a much less confusing picture initially.

As a starting point, we should think of the intake system as a simple pipe, open to the atmosphere at one end and closed (by the intake valve) at the other. For our purposes we may consider that this pipe will be filled with air, as the fuel droplets have no direct effect on wave action, and that the air will be about 60° F. (due to the cooling effects of evaporating fuel in the air). Any disturbance at the closed end of this pipe will send out a wave, and the wave will advance toward the open end of the pipe at the speed of sound (about 1100 feet per second). In practice, such a disturbance is created each time the intake valve opens and the cylinder begins to draw in a gulp of air. This sudden intake of air from the induction pipe creates a partial vacuum and, as air from farther down the pipe moves forward to fill the void, a negative-pressure wave develops and travels outward the open (intake) end of the pipe. Upon reaching the open end of the pipe, the wave collapses with the inrush of outside air. This, in turn, creates a new, positive-pressure reflected wave and it promptly rushes back down the pipe to the closed intake-valve end. There, it is reflected a second time — again as a positive pulse — and travels out to the end of the pipe again to be reflected yet a third time. On this third reflection of the original pulse the wave is positive and, as it rushes from the open end, it creates a rarefaction at the mouth of the pipe that forms a

fourth wave, negative this time, and this goes back down the pipe to be reflected again and again, changing sign and losing amplitude with each open-end reflection until it dies away entirely.

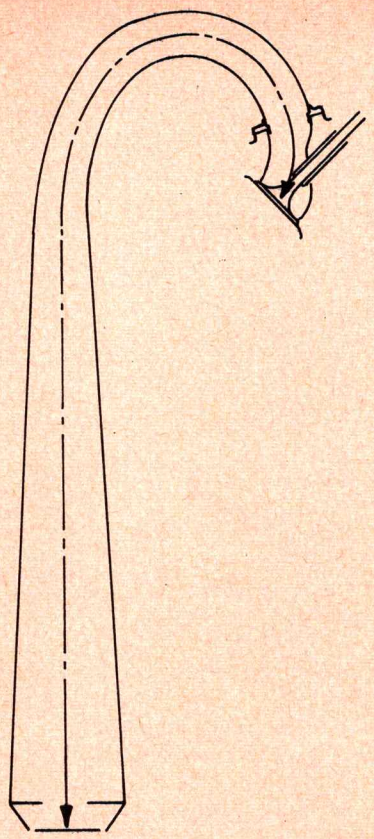
The whole process, which remains remarkably uniform throughout a considerable range of wave amplitudes and air densities, follows the well-known characteristics of waves in pipes. Pulses are reflected from both open and closed ends of the pipe, but they are reflected with the same sign from the closed end, and change sign at the open end. Thus, every other wave reaching the intake valve will be positive and ram-tuning consists merely of timing the arrival of this pulse so that it drives an extra portion of air into the cylinder just before the intake valve closes.

The timing of the pressure pulses will depend entirely on the intake cam timings, so we might as well start there. Taking, just as an example, the BSA Gold Star "single" we find that the intake cam opens the valve at 25 degrees before top dead center, and closes it 65 degrees after bottom dead center, for a total duration of 270 degrees of crank-angle. However, it should be understood that we cannot use these figures, unadjusted, as a basis for our timing of the intake pipe pulses. The first 30° of opening and the last 30° of closing on the cam represents very little valve movement. For our purposes we may consider that the valve is not really open until about 5° after top dead center and is effectively closed at 35° after bottom dead center. Therefore, we will have to work with the intake wave motion between those limits. The job is further complicated by the fact that the initial negative pulse, which is caused by the air in the intake pipe following the downward movement of the piston, does not reach its maximum until perhaps 120° after top dead center.

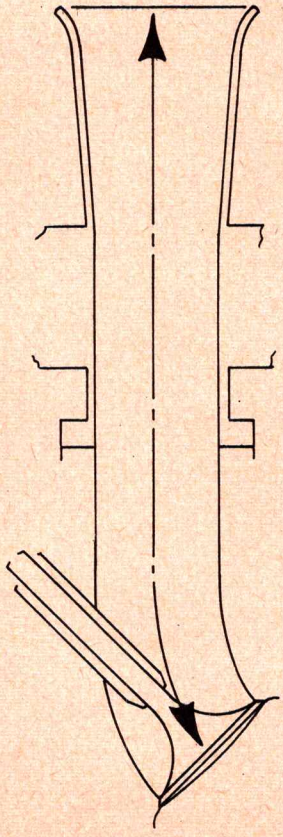
In the BSA engine we have chosen as our example, it seems probable that the initial pulse peaks at 120° after top dead center, and the reflected positive wave should arrive back at the valve to pack in the extra air at about 30° after bottom dead center. This is a time, expressed in terms of degrees of crank-angle, of 90° and once we have established this fact, the rest is easy.

Choosing 6000 rpm as the engine speed at which we want the maximum boost from the intake pipe resonance we find that the 90° phasing becomes — in terms of real time — 1/400 of a second. And how do we know this? It's easy. At 6000 rpm the crank turns a single revolution in 1/6000 of a minute, representing 100 revolutions per second or one revolution in 1/100 of a second. Hence, our 90° — ¼ of a complete revolution — becomes 1/400 of a second. At its speed of 1100 feet per second, the pressure wave will travel 2.75 feet, or 33 inches. By making the intake pipe just half that long, 16.5 inches (measured from the valve head to the carburetor's air-flow trumpet) we give the original negative pulse just enough time to travel out to the end of the pipe, change into a positive-pressure pulse, and arrive back at the valve to, in essence, supercharge the cylinder just before the valve effectively closes.

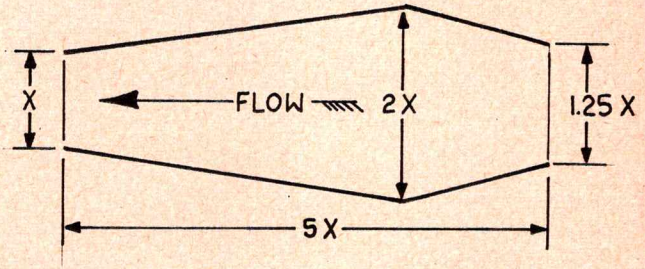
If the wave motion in the pipe would only stop after this first reflection, we would have no more calculating to do. Unfortunately, this is not quite the case. The wave continues long after the initial disturbance — losing perhaps 10 to 15% of its amplitude with each successive reflection. In our example, the 90° phasing of the returning wave would quickly rise



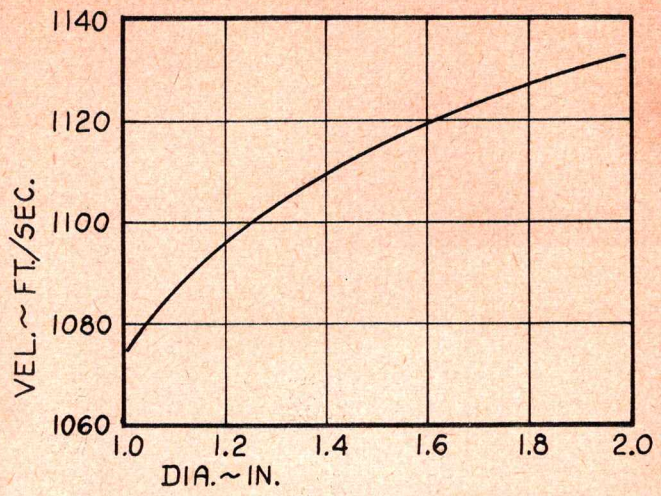
The total exhaust system length for purposes of tuning is measured along the indicated line.



The "tuned length" of the intake tract is measured along this line.



This proposed intake pipe megaphone could retain these basic proportions and be streamlined for better efficiency.



The graph gives the approximate wave speed through pipes having diameters between one and two inches.

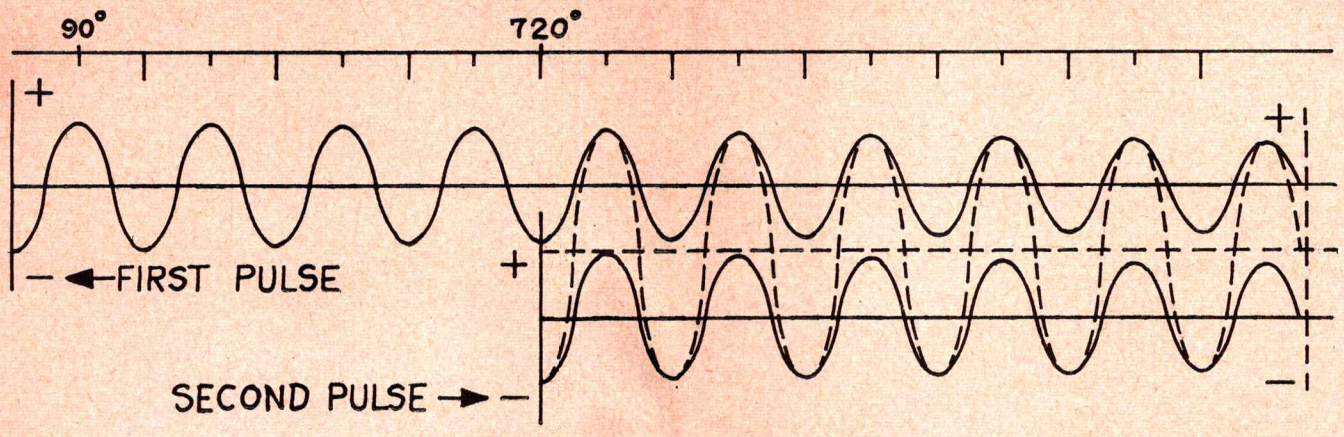
much higher than that created by any single pulse. This might not be the condition encountered with some other valve timing and a different tuned length. Indeed, under certain combinations of timing and tuned length, there could be a residual negative wave, left over from a previous cycle, arriving at the valve just as the positive wave, for which we have been striving so hard, made its appearance. Of course, the residual wave will not have as great an amplitude as the later, planned-for, wave and will not cancel it entirely – but it would certainly do a lot to reduce the effectiveness of the system as a whole. For this reason, anyone planning for a tuned intake pipe would do well to take this into account. It is not really necessary to do any mathematical analysis of the wave action. A simple graph, representing the introduction of successive pulses through a period of several complete engine cycles, will soon tell you if anything is going amiss. We have prepared a sample of such a chart and a quick study of the waves represented there will show what is happening and when it happens. It will become apparent, in studying wave timing at different speeds, that the effects are not always beneficial. On the other hand, if the matter is entirely ignored no benefit will *ever* be had and with the modern, close-ratio transmission the engine speed can be held within the limits where the tuning *is* effective.

There are other considerations in this business of ram tuning. Pressure wave velocity in the intake pipe varies not only with air density, but with pipe diameter as well. And, there are even some variations from one system to another. These are due to internal friction caused by roughness inside the port and any obstructions through the carburetor body. The latter factor we cannot adequately assess except through actual testing of a specific installation. But the former, that of wave velocity compared to pipe diameter, lends itself more readily to theoretical prediction. We have, accordingly, included a graph showing the approximate relationship between diameter and velocity.

There have been, in the past, some attempts to use another form of ram tuning: The forward-ram intake. This scheme involves the utilization of an air scoop and this will, hopefully, force air into the carburetor under pressure. It sounds plausible, but in actuality there are complications. In the first place, if the scheme is to have any hope of success, the pressure at the carburetor throat must somehow be applied at the float bowl and probably also at the tank. Otherwise, the fuel flow might be affected and the power lost in that fashion would more than balance any gain from the increased pressure. Secondly, there is precious little hope of getting a useful amount of pressure from the motorcycle's passage through the air. At 150 mph, the kinetic energy of the air, converted into pressure at 90% efficiency, would only be 0.4 pounds per square inch. And, at half that speed, 75 mph, the boost would drop to about ¼ of *that* value. Thus, for all practical purposes, we may entirely ignore this expedient, for it is of very doubtful value.

Much more valuable is the natural counterpoint for resonant intake tuning: The tuned exhaust system. The principles we set forth for the intake system apply here as well, as we are again dealing with a simple pipe – closed at one end and open at the other. In this case however, we are starting with a very strong positive pulse – caused by the release of the exhaust products into the pipe – and our purpose is to provide a negative pulse to vacuum the residual combustion gases from the cylinder.

The basis for calculation as applied to the intake system may also be used on the exhaust – but with a few differences. Not the least of these is the wave speed in the pipe, which is much higher in the hot exhaust gases than in the cool, dense, fuel/air mixture. As in the intake pipe, the wave speed may vary, but it has been demonstrated that 1700 feet per second is a workable average. Using that figure, and going back to our BSA Gold Star engine, we find an exhaust valve opening point of 65° before bottom dead center and a closing point of 25° after top dead center. Our



The graph shows how successive pulses combine to form an overall wave of higher amplitude (indicated by dotted line.)

remarks about effective opening and closing points apply here as well, but the effect is not so pronounced because of the high pressures involved. Anyway, the exhaust valve opens and the positive pressure wave begins to form, reaching maximum strength at, probably, 45° after bottom dead center. From this point onward, the tuning is less involved than it was for the intake pipe because in all engines we try to arrange for the return of the first reflection right at top dead center. At that moment, both the exhaust and intake valve will be open and the correct timing of a negative pressure pulse will enable us to not only pull out the last of the exhaust gases, but to draw in the first of the new fuel/air charge as well.

In the BSA engine we are discussing, the phasing period is 135° and at 6000 rpm that represents a time of 3/800 of a second. In that time, our wave will travel 6.4 feet and to allow the initial, positive, pulse to travel out to the end of the pipe, be reflected as a negative pressure pulse and return to the valve just as the piston reaches top dead center, the exhaust pipe should be ½ of 6.4 feet: 3.2 feet or 38.4 inches.

The timing of the exhaust pulses are very little effected by the shape of the pipe. Megaphones, of varying shapes and sizes, have been used and are, according to all indications, very effective. Little in the way of specific, concrete data is presently available but in the material we *have* been able to find, there are some bits of useful information.

Some research is being done in Japan and although much of it is not directly applicable to motorcycle engines, there are a couple of specific points that do apply. They have found, for instance, that slow-taper megaphones give better results than a straight pipe, and that the opening angle should not be more than 8°. Moreover, the best results with tuned pipes terminating in megaphones were as much as 10% better than those for straight pipes. Finally, although we may have drawn an incomplete conclusion from the evidence presented, it would seem that the optimum size for the megaphone is reached when – at an 8° angle of divergence – the outlet end is about 2.5 times the inlet diameter. Applying this to a motorcycle with a 1.5 inch primary pipe size, the megaphone would be 3.75 inches at its bell-end.

The exact effect of the "reverse-cone" megaphone is also something less than absolutely clear, but basically the reversed section serves two functions. Primarily, it gives the effect of strengthening the pulses that reach the end of the pipe – just as does the rest of the megaphone. Unfortunately, the amount of cone to use is found only by experimentation and if you lack a dynamometer, it could be a very elusive thing to determine. The second, and we suspect the most common reason for the use of the reverse cone, is that it strengthens considerably the open end of the megaphone. These trumpets are made, usually, of very thin steel and would be forever getting themselves mashed out of shape if it were not for the reversed section.

While on the subject of reversed-cones, we might mention that there is some interesting work being done in applying these to the intake side. The theory there is that by providing an area where a volume of air can be held "at ready" just in front of the carburetor throat, the flow is smoothed out and efficiency is improved. This is still very much in the experimental stages but for those interested the megaphone should be 2.0 times the basic intake pipe diameter at its maximum, about 5 times as long, and have an outer opening 1.25 times the size of the basic pipe. (see drawing)

It should be clearly understood that all of the calculating in the world will not get you intake and exhaust systems that are precisely "on the money." The tremendous number of variables that influence the respective systems prevent that. Even so, by using the methods outlined, you will put yourself very close to the optimum and only small changes will then be required to finish the job. That is, in our opinion, somewhat better than the "stab in the dark" system that presently prevails.

GO black... for GO!

BY JIM BUTLER

The saying "if it doesn't go, chrome it" dates so far back in the history of racing that it would be difficult to give credit to the original source. This racing fraternity spoof on the plush lacquer-and-chrome gilding of the street machine contains, however, a grain of truth, albeit it is slightly distorted. One thing is for certain, it won't go as well after you chrome it. And the moral to this story concerns bright metal work and engine cooling.

Let's take the average air-cooled engine as an example. Cooling is principally by forced convection in which a continuous stream of air is passed over the engine by the forward motion of the bike. Radiation also plays an important role in dissipating heat from the air-cooled engine although conduction, which is so important in water-cooled engines, has a negligible effect. Much has been done, of course, to improve the cooling effects of forced convection but there are certain rather obvious limitations. The front wheel, fork and frame members are essential and their detrimental effect of deflecting the air stream away from the engine cannot be eliminated. Air scoops will improve engine cooling (and performance) but their built-in air resistance eliminates them as a practical solution to the problem.

The advantage of conduction being out of the question without some necessarily elaborate and weighty heat exchange unit, we are left with only one alternative—to improve radiant cooling. And strangely enough, little thought has been given to the advantages of this method of cooling. In fairness to the question, however, it should be noted that cooling is not a critical problem with engines that run within factory limits. With the competition machine, however, the matter is entirely different. When tuning for all out power the mechanic will quickly realize that the limits of engine cooling also stand as the limits of power development in the internal combustion or heat engine. Or stated differently, the amount of heat that can be developed in a given engine is directly dependent on the amount and rate at which heat can be dissipated from the engine. To improve the rate and amount of heat dissipation or cooling effect will, in turn, improve the efficiency and power of the engine.

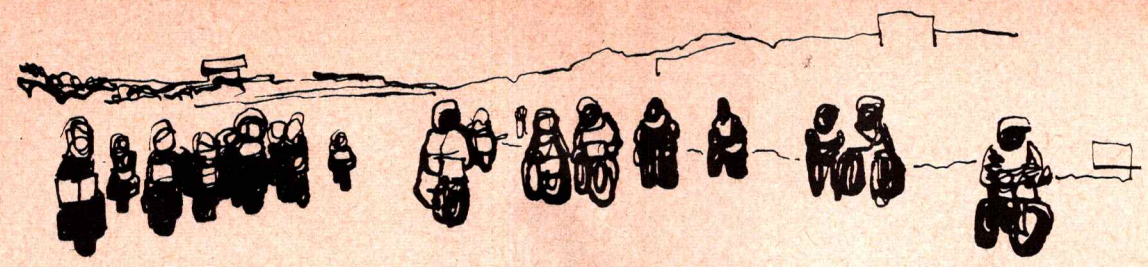
Which brings us up to the matter of radiation. And here a few definitions are in order. The term "radiation" refers to the continual emission of energy from the surface of all bodies. This energy is called radiant energy and is in the form of electromagnetic waves. These waves travel with the velocity of light and require no transmitting medium. On striking any object that is not transparent to them, the waves are absorbed and their energy converted into heat. It should be noted that these waves are even absorbed by air to some extent.

The radiant energy emitted by any surface, per unit area and unit time, depends on the nature of that surface and upon its temperature. And while our principal concern is emission rather than absorption, there is a direct relationship. This is referred to as Kirchhoff's law which, simply phrased, states that those surfaces which are good absorbers of radiation are likewise good emitters of the same radiation when heated. Also, surfaces which are good absorbers are correspondingly bad reflectors of the same radiation. Based on these experiments Josef Stefan formulated an equation for accurately determining the rate of emission of radiant energy per unit area. The reference surface is termed a "blackbody" and is defined as a surface that absorbs all the radiation that is incident upon it. Such an ideally black surface would then have an absorptivity of unity or one. Actually, no surface is ideally black and their relative emittance will always be less than unity. The following chart lists the relative emittance of various surfaces as determined by Stefan's Law:

Material	Temperature Degrees C.	Relative Emittance
Aluminum	250-600	0.039-0.057
Iron	150-1000	0.05-0.37
Brass	250-400	0.033-0.037
Asbestos	40-350	0.93-0.95
Lampblack	20-350	0.95

From the foregoing you will notice that the relative emittance of aluminum is less than that of iron and that both surfaces are much poorer emitters than is lampblack which reflects only about 1%. To point out a practical example, the thermos bottle is coated with silver which is highly reflective and therefore a very poor emitter. Applying this logic to engines it is understandable, then, that a brightly chromed cylinder head may look pretty but will have very poor emissive or radiating qualities. Conversely, the cylinder head (and, for that matter, the entire engine) that is finished in a dull black will have very poor reflective qualities but will be a good emitter.

In practical application it has been found that 0.5 hp could be gained by blackening the aluminum surfaces without any other changes to the engine. This comes as close to getting free horsepower as anything that we can think of and while the thought of a dull black engine may offend the aesthetic senses of some riders, we are sure that the improved performance factor will prove a strong lure to the competition minded. And when you replace your valve covers after applying the dull finish, use a metal gasket rather than a cork one. The metal gasket does not insulate the cover from the engine heat as does the cork gasket; the cover then becomes a radiating surface for better heat dissipation.



CYCLE ROUND UP

This is it. To all of you cycle enthusiasts with faith in what CYCLE WORLD was going to be, thank you for your confidence and good wishes. To you riders who have never heard of us, and we know there are lots of you, we are here to try and give you everything you want in a cycling magazine. We have worked hard on this first issue, as we will on all to follow. We think we have what you want: Comprehensive road tests, meticulously executed by our Technical Editor, Gordon H. Jennings. Technical features such as Gordon's "Intake & Exhaust Ram Tuning", only a sample of what is to come. Technical features such as the story on Airheart Engineering's experiments with disc brakes on bikes. New models of Harley-Davidson and Triumph for 1962. Competition reports like Associate Editor Carol Anderson's summary of the West Coast flat track season. An analysis of the three flavors of Mini-Bikes followed by a report on Luther Engineering's three gems. A report on the luxurious Vespa Grand Sport scooter. Champion Ed Kretz Jr. tells you about riding the fantastic Honda 4. And much more . . .

CYCLE WORLD will grow very soon as we are confident the cycle industry will join us in our efforts to bring you everything in motorcycling.

The column you are reading is Cycle Round Up, both an editorial and an outlet for interesting news and tid-bits. As the Editor of CYCLE WORLD I hope to keep you informed, amused, disgusted, aware, astute, and I hope— interested.

As an example of what I speak, a front page story in the Inglewood, California, Citizen, is about a motorcycle police officer who raced through traffic 20 miles, in 19 minutes.

He wasn't shaping up for the next Daytona; an errand of mercy was his inspiration. Officer Bill Siddall was rushing to the Daniel Freeman Memorial Hospital with a piece of orthopedic equipment that was essential to the completion of an operation that was in progress. He received heartfelt thanks from the parties involved, and may we add our kudos for a job that could only have been done on a motorcycle.

HIGHLIGHTS OF AMA COMPETITION COMMITTEE MEETING

Most exciting news to come out of the AMA Competition Committee Meeting held in Houston, Texas, November 3, 4, 5, 6, 7 and 8 was the announcement that road racing classes, both professional and sporting, having been formulated to include the entry of European machines.

Any make or size of streamlined or unstreamlined motorcycle will now be able to compete in the open class, including the new Matchless overhead cam G-50 which was approved after on-the-spot riding by Competition Committee members and much discussion, pro and con. Additionally, a complete 250cc professional Class C road racing program was set up and with this announcement the dream of true International competition is fast becoming a reality.

Other Class C racing rules were virtually unchanged with the following exceptions: three types of fiberglass tanks were approved, kick starter pedals may now be removed, and tempered masonite or fiberglass number plates were okayed in the interests of safety; also, racing insurance benevolent fund benefits have been raised.

Class C National Championships are listed below and a full report of the Competition Committee meeting minutes and dates of other important 1962 events will be included in next month's CYCLE WORLD.

NATIONAL CHAMPIONSHIP
ROAD RACES
200-Mile—Daytona Int'l Speedway—Mar 4.
150-Mile—Watkins Glen, N.Y.—Aug. 12.
100-Mile—Laconia, N.H.—June 17
Proposed 120-Mile—Shreveport, La.—April 14-15
NATIONAL CHAMPIONSHIP
HALF-MILES
8-Mile—Ascot Park, Gardena, Calif.—July 21
10-Mile—Columbus, Ohio—June 24
15-Mile—Heidelberg, Pa.—June 10
NATIONAL CHAMPIONSHIP
ONE-MILES
20-Mile—Sacramento, Calif.—Sept. 30
50-Mile—Springfield, Ill.—Aug. 19
NATIONAL CHAMPIONSHIP TT
7-Mile—Peoria, Ill.—Aug. 26
NATIONAL CHAMPIONSHIP
CLASS A SHORT TRACK
Santa Fe, Illinois—Aug. 24

SCOOTERS & MO-PEDS BANNED FROM FREEWAYS IN NEW YORK, TOO

A recent change in the New York Vehicle Code has followed California's lead in banning "motor driven cycles" of less than 15 hp from the freeways in that State. This is a fair law, up to a certain point. Low-powered and low-performing motor-bikes and mopeds most certainly have no place on a freeway, but to our knowledge there is not a scooter in the world with 15 hp, but some hardly need it. Several scooters, including the Vespa and Heinkel Tourist, though they have far less than 15 hp, will do 60 to 70 mph and cruise all day at those speeds.

The crux of the problem to us is, who is to determine the horsepower of a given vehicle? When stopped by a police officer must you be carrying a notarized certificate from an accredited dynamometer operator? We already know of a case of someone being cited on a Los Angeles Freeway for riding a 20 hp Honda 250! If the law is to succeed, fairly that is, every police officer patrolling the freeways will have to carry an official "horsepower list", a fact we rather doubt will come to pass. And a bit ridiculous if it did.

CYCLE WORLD urges their readers to write their Assemblymen and demand a repeal of this unfair law, if not at least a revision of its application. The restricting of the horsepower of a cycle is not at all practical; too many vehicles of less than the specified 15 hp will perform quite satisfactorily on the freeways, or any

Continued on Page 45

MEET THE
MINI-BIKES

The Newest Form Of Cycling Now Comes In Three Flavors

Like Jello, Mini Bikes, the two wheeled karts, come in several flavors now. The first, and familiar form, is that of the tiniest imaginable motorcycle sporting five or six inch wheels and powered by a two-stroke kart engine. Popular engines being used are the West Bend 580, Clinton A-490, McCulloch MC-6, Power Products AH-58 or AH-58. All of these little power plants average from 2½ to 7½ horsepower and will push the average Mini Bike along on a flat surface at a speed in excess of safety.

Small, inexpensive, fun to ride, easy to transport and very simple to ride, their virtues are easy to understand.

Like everything else, though, they have their drawbacks and will not, most assuredly, ever replace the full size counterpart.

The flavors could be called; Mini Bikes, for more or less general type riding, Scrambles, or off-the-road bikes, often employing four-cycle engines of two to five horsepower and in some cases, suspension. And true off-the-road work vehicles as originally manufactured by the Tote Gote Company which holds a patent on the name so some other title has to be devised. Luther Engineering calls their three flavors Mini-Cycles, Mini-Goats and Trail-Goats. The variations in Mini Bikes are becoming so widespread that several companies are now specializing in one phase or the other. The Bill Matthews Co. in San Gabriel, Calif., makes the Rocket Cycle, a very stable and large wheeled vehicle that is legal to be licensed for the streets in most States; accessories include lights. At the other end of the spectrum are such machines as the Mountaineer, made by the Green Mfg. Co. in Salt Lake City, Utah. Their goat features spring suspension, four-cycle engine and a two-speed torque converter clutch.

Luther Engineering's Trail Goat is in the large size range and employs an excellent swing arm rear suspension and coil springs on the forks. This range is headed by the original Tote Goat, made by the Bonham Corp. in Provo, Utah.

The popularity of this type of "bike" is strongest among sportsmen and outdoorsmen as a means of getting into difficult areas to hunt and fish. We are certain that most of CYCLE WORLD'S readers know what started the whole thing. Scrambles and good dirt bikes have been wandering off into uncharted country for years but due to their general size and price the third form of Mini Bikes came into being. One of the most salient virtures of Mini Bikes et al is their extreme portability; most of them will drop nicely into the average automobile trunk or roll right into the back of a station wagon without much ado.

Much has been written about Mini Bikes in competition, both on pavement (usually a kart course) and in dirt events such as scrambles. We favor the latter form because as speed increases, stability decreases, and a fall on black top becomes a common occurance in the heat of competition. The small wheels employed by most Mini Bikes do not track too well at speed and become quite unstable. Mini Bike Scrambles and TT's can be great fun and demand a considerable degree of rider skill and agility. But the best time can be had by throwing one into the trunk of the car, driving out to the country and chewing your way down a dry river bed, up a steep hill, through sand and mud, across expanses of grass, etc.

The wide range of types and accessories available is almost staggering.

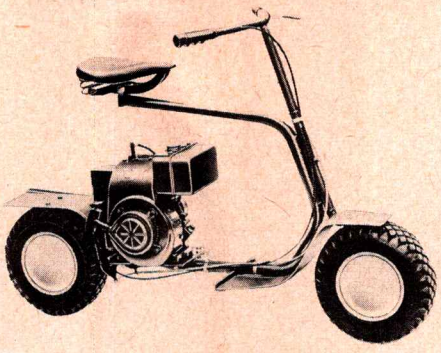
Bug Engineering in Azusa, California, make an excellent off-the-road-bike called the Trail Goat that employs an ingenious two speed system using the jack shaft. Top speed is only 15 miles per hour but the tractability is amazing. Power is supplied by a 3½ hp, four-cycle engine; it is 4" longer than their standard Bug "Flea" and features such things as a gas gauge, kick stand, chain guard that fully covers the clutch and chains, 14" wheels front and rear, and a new style seat that improves considerably the rider's ability to remain in charge during the roughest going.

Ben Hunt Mfg. of Walla Walla, Washington, offers the Caper Cycle in a wide range of models with accessories that include lights and fenders. The Caper Cycle has won many Mini Bike events in Southern California.

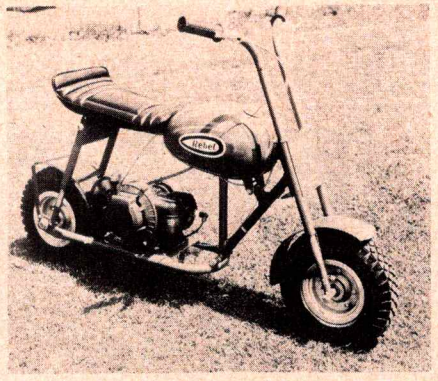
Another motor in the smaller category is Go-Kart Mfg. Co.'s "Scrambler;" it too is available with suspension.

The following pages are devoted to CYCLE WORLD'S first Mini Bike test, that of the Luther Co.'s three flavors of Mini Bikes. Future issues of CYCLE WORLD will be devoted to tests and features of this new facet of motorcycling.

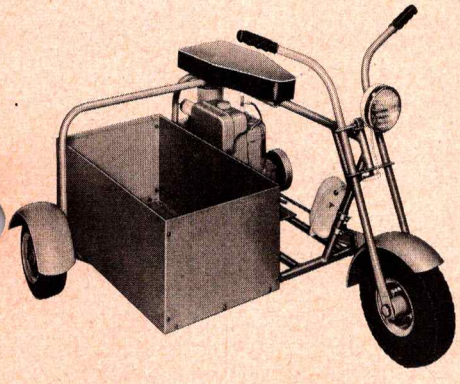
The Berkeley "Savage" makes use of an unusual double tube frame. Note the comfortable looking spring seat.



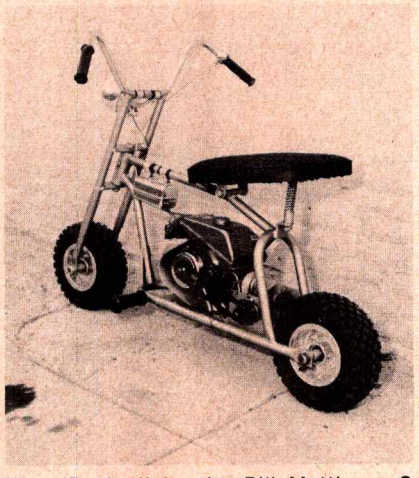
Columbus Cycle Co. are the makers of the Rocket Scooter; it employs an unusual form of frame construction.



The "Rebel" micro-cycle by Micro Engineering, utilizes the potent Power Products 8.2 cu. in. two-stroke engine.

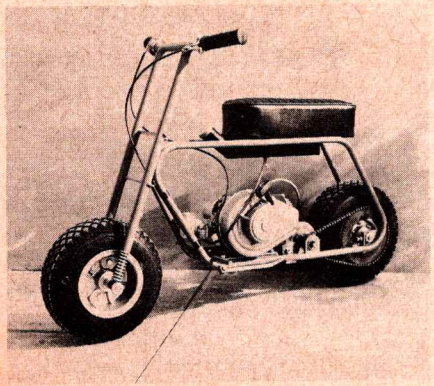


"Little Gen" has a side car available and is powered by a 4-cycle Clinton engine.



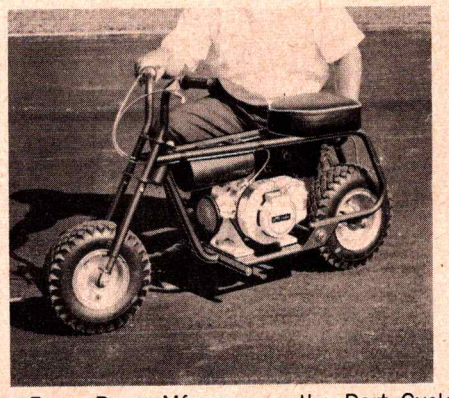
The "Rocket" by the Bill Matthews Co. can be licensed in some states for street use, features front suspension and spring seat.

Fox "Campus Bike" has California-style high riser handlebars, is Clinton 2-cycle powered.



The famous Bug "Flea" is available in many versions; this model is equipped with the well known West Bend 580 two-stroke engine and a disc brake.

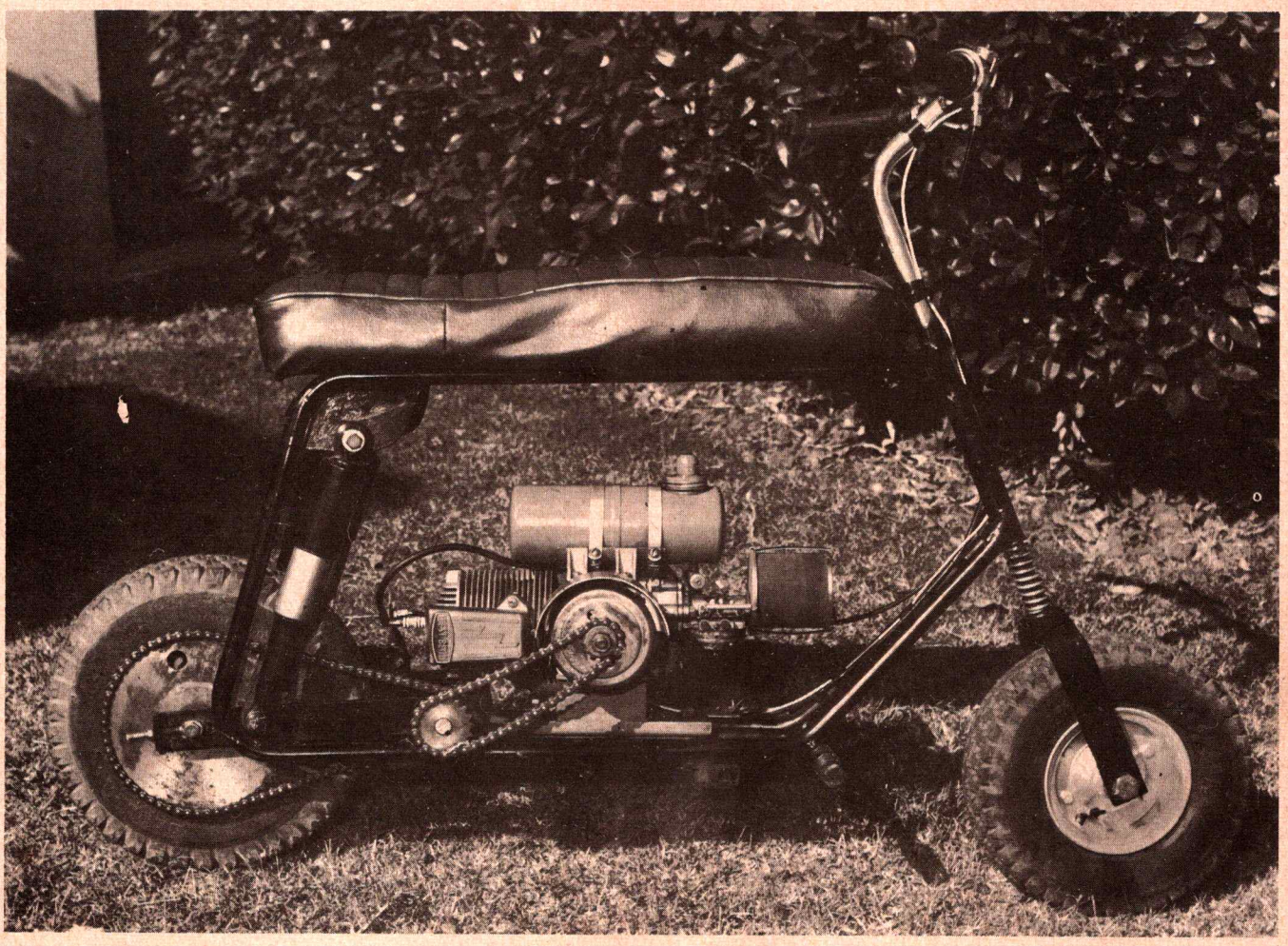
A winner in many West Coast Mini Bike events is the Ben Hunt "Caper Cycle", made in Walla Walla, Washington.



From Rupp Mfg. comes the Dart Cycle powered by the 8 hp Power Products kart engine.

MINI BIKE TEST REPORT

LUTHER COBRA



The Luther Cobra, a Mini Bike that has a lot to offer.

To better acquaint ourselves with these little phenomenons, the CYCLE WORLD staff called upon the good graces of Luther Engineering Co. in Pasadena, California, who loaned us one each of their three mini vehicles, each a different flavor. These are: a standard Luther "Cobra," pure mini bike with a neat pair of swing arms and shocks on the rear and coil springs on the front, a "Mini-Goat", their slightly larger mini bike powered by a Briggs and Stratton 4-cycle engine and unsprung, and third, a new machine to their line called "Trail Goat", a pure off-the-road machine with swing arm rear suspension and coil spring/fork front end.

The Luther firm tells us that the Mini Goat is a bike sired by Trail Goat out of Mini Bike. Both the Mini Goat and the Trail Goat employ large rear wheels and 16" tractor tires that give excellent traction in rough going.

Rolling the two smaller bikes into the back of a station wagon or dropping them into the trunk of the average car presents no problems, but the larger Trail Goat is a bit more machine to handle. Due to its size and weight it requires two men to heft but is an easy task. An ingenious feature of the Trail Goat is the folding upper half of the fork; this drops the handlebars forward and down, reducing the overall height of the machine, making it possible to get it into a much smaller space (such as the back end of a station wagon) where it will stand upright with ease.

One of the first and most important observations made was the superiority of the 4-cycle engine on the Mini Goat and the Trail Goat. The larger rear wheel on both machines coupled with the low speed torque of the engine gives them an amazing amount of tractability.

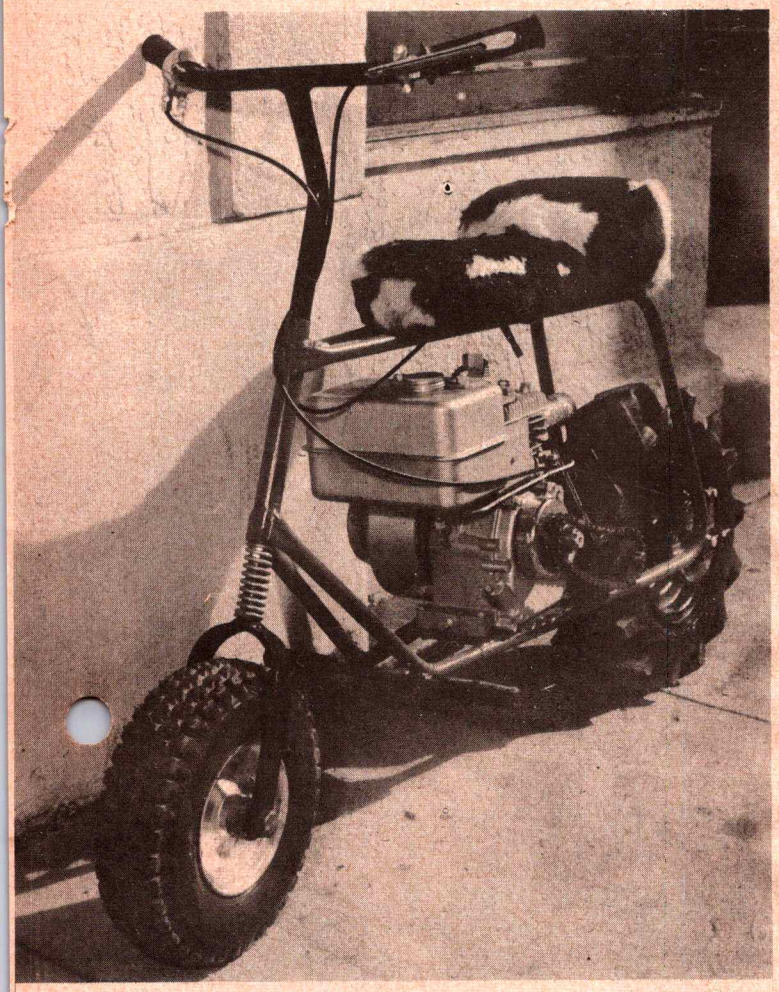
The rear suspension on the Mini Goat and the Cobra is the answer to the usual sore derrier of the mini bike rider. It also aids handling and traction considerably as this allows the rear wheel to follow the general irregularities of the surface. The comparison between a sprung and un-sprung mini bike is a revealing one; it is even possible to stay aboard one that has some kind of suspension.

One member of our staff, new to mini bike riding, provided a new rider's reaction that is always unique and interesting to see. He ended up in a huge clump of bushes after having tried to hang on and steer a true course at speed up a hill.

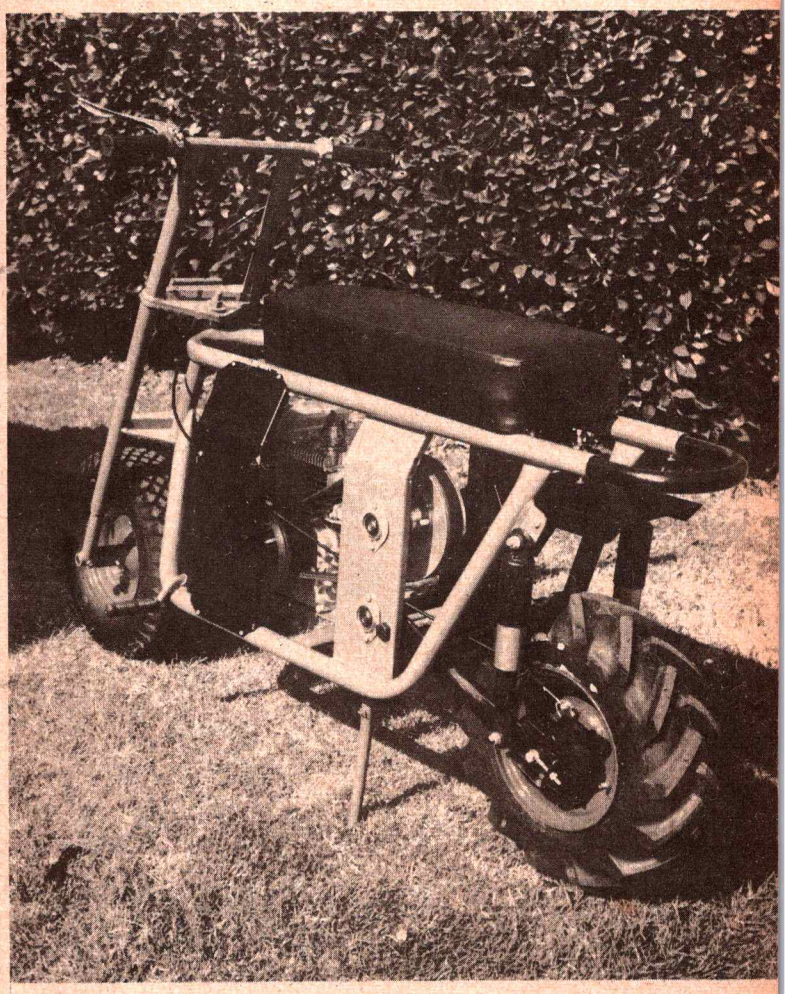
The primary reason, of course, that a suspension-equipped bike is more stable off the road is that the wheels are more inclined to stay on the ground, so control is obviously easier. A stiffly mounted vehicle is inclined to bounce a great deal and is consequently more difficult to control.

The rider of conventional motors will take a few moments to get accustomed to the rear brake being activated by a hand lever as there is no front brake, but after

MINI GOAT & TRAIL GOAT



The Luther Mini Goat with 3½ hp Briggs & Stratton 4-cycle engine.



The Luther Trail Goat, a formidable vehicle for the cross-country rider or sportsman.

a few anxious moments it becomes easy.

Luther Engineering claims that the Mini Goat will carry over 300 lbs. through the roughest terrain by Indian travois, we believe it after being quite surprised to see it literally crawl up a sheer cliff of loose sand and gravel. The 4-cycle engine is a decidedly superior unit for rough terrain because it develops a great deal of power and torque without the rpm and commensurate wheel spin of a two-stroke.

The rear tire on the Mini and Trail Goat is an industrial tractor tire mounted backwards; Luther states it bites better mounted that way. No situation encountered on any one of the Luther machines proved so rough that simply picking it and turning it around didn't get us out of trouble. This is a virtue that can be applied to all mini bikes, of course.

Optional extras are available on all three machines, including extra engines, kick stands and the deluxe hide upholstery as on the Mini Goat CYCLE WORLD tested.

All of Luther's machines are constructed of steel tubing, single on the Mini Cycle and Mini Goat, and double on the Trail Goat. Front suspension on the Cycle and Goat is by a single coil spring on the single fork column, while on the Trail Goat it is controlled by two coils, one in each of the double forks.

Rear suspension is by a pair of sturdy trailing arms, anchored behind the engine mount, and two tiny plastic shock absorbers that Luther imports from Italy. First examination of these little buffers gives no indication of their marvelous ability to cushion the ride and aid traction, but the first few feet across the nastiest territory we could find proved their usefulness.

In the two smaller bikes, power is transmitted to the rear wheel with #35 kart chain running through a kart centrifugal clutch and a jack shaft for better gear ratio. As the chains are rather exposed, a simple type of chain guard might be of some use although we encountered no difficulty.

The Trail Goat employs a torque converter clutch driven by Gilmer belts and with the 3 hp engine as tested it will climb almost anything. Luther also furnishes a 5-3/4 hp engine and with this power plant it would probably climb a wet plaster wall.

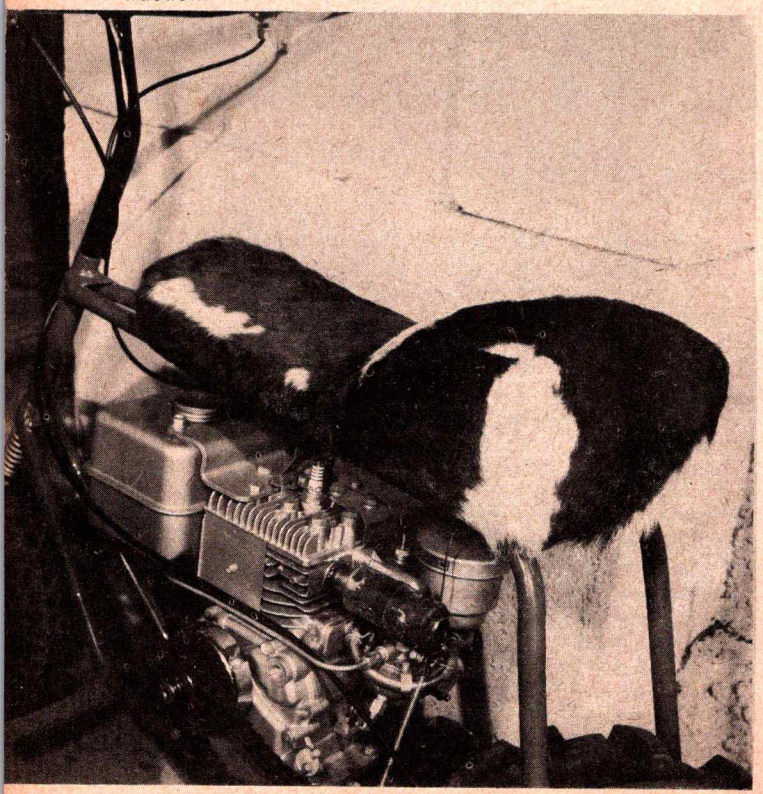
Summing it up, Mini Bikes are a lot of fun. Any serious motorcyclist should give them a try and discover the many virtues, with some shortcomings, of course, of these little chargers. They are easily transported and inexpensive to operate and the Luther "family" of mini-machines are excellent examples of this fast growing version of cycling.

PHOTOS BOB WILKERSON

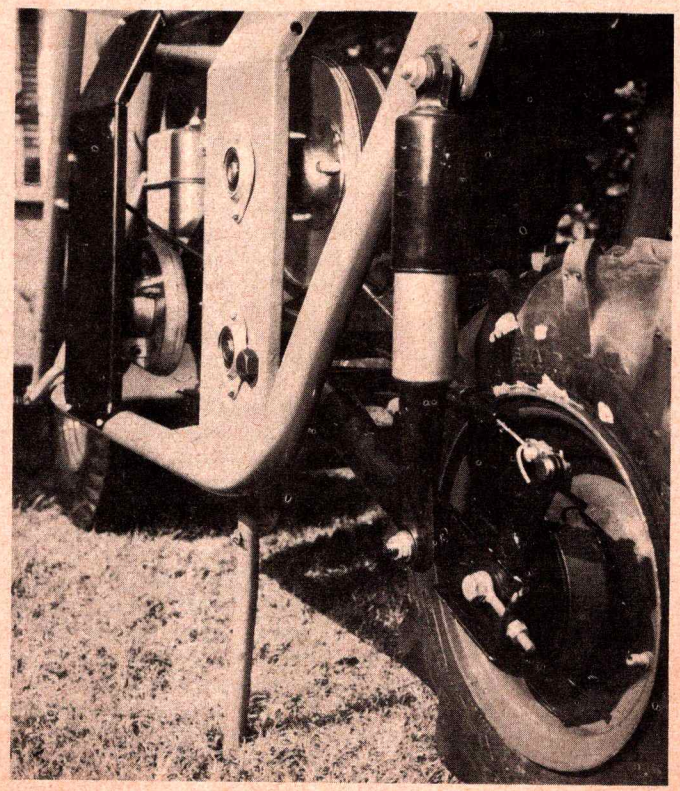
CYCLE WORLD Editor, Joe Parkhurst, throws the Luther Cobra about a bit.

And up she goes! Editor Parkhurst was amazed at climbing ability of Luther Cobra.

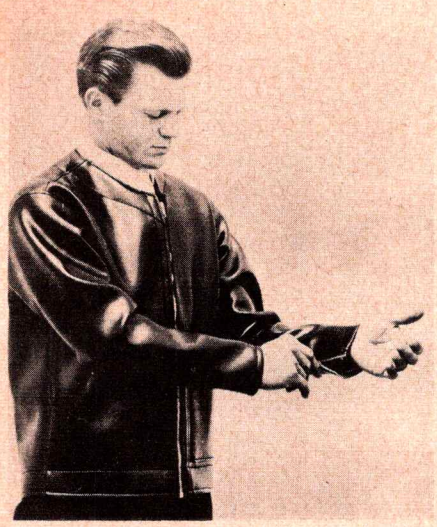
Ride 'em cowboy! Cowhide upholstery is an optional extra on the Luther Mini Goat. Rear tractor tire accounts for traction.



The same swing arm suspension as on the Mini Goat is used on the Trail Goat.

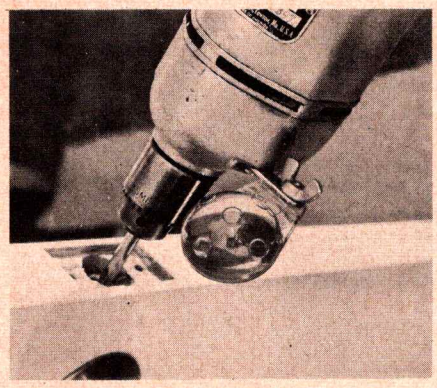


CYCLE WORLD GOES SHOPPING



RACING JACKETS

This snappy new racing jacket from Bug Engineering has been designed, tailored, trimmed and cut for action. Made of attractive water-repellent naugahyde and double topped stitched for strength, the jacket also features tylon zippers on the front and sleeves. They are available in three sizes — small, medium and large, and can be purchased with ($1.00 extra) or without collar. Priced as low as $15.95 from Bug Engineering, 330 So. Irwindale Ave., Azusa, Calif.

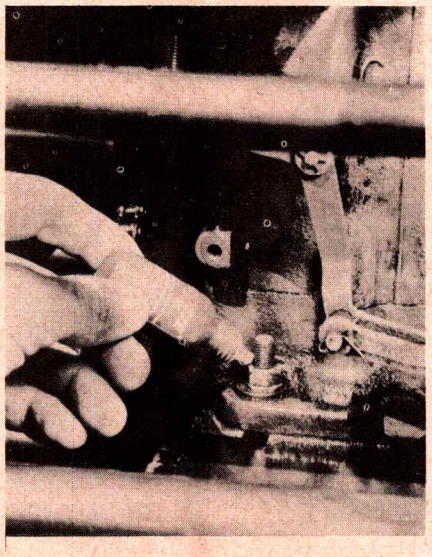


TRU-LEVEL

Ever had any luck drilling a straight hole with your electric or hand drill? Even with someone at your side to give you that "Up a little" or "Down a little", bit? Then Tru-Level is just the item you need. This level attaches quickly to any power or hand tool and tells you at a glance when you're square with the work. It's etched at 45 degrees, too, giving you the same accuracy when working at an angle. Made of rugged plastic, Tru-Level is ideal for the handyman and a real producer for the professional craftsman. Can be used to level the kitchen range, plumb the TV antenna or level a trailer home, too. Send $1 in cash or check to Oliver Development Co., Dept. 128, 451 So. First St., San Jose 13, Calif.

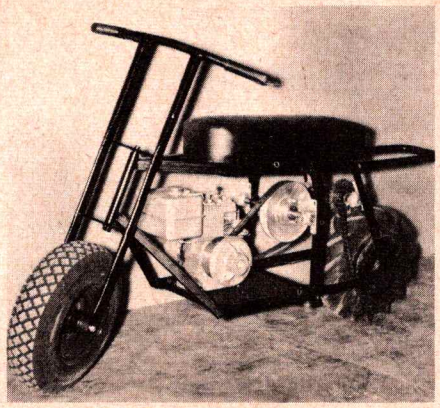
"LIQUID LOCK NUTS"

High-vibration conditions encountered in motorcycling cause nuts, bolts and other fasteners to loosen. A simple method of preventing such damage is to apply Loctite sealant to each fastener. Assemblies will stay put in use but will yield to ordinary tools in the workshop. Loctite is a product of American Sealants Co., Hartford, Conn.



BLUEAWAY

Restores discolored exhaust pipes without re-chroming. Blueaway is a cream type cleaner that will remove heat-caused blue discoloration from chrome exhaust pipes. Its chemical action works quickly and easily. Motorcycle dealers everywhere can supply it at $1.25 a bottle. Steen Lubricants, Alhambra, Calif. and Competition Chemicals, Iowa Falls, Ia. are the distributors.



BUILD AT HOME TRAIL OR MINI CYCLE PLANS

Now you can build your own trail or mini cycle at home with these plans which should enable you to obtain professional results and save up to $50 in costs. Step by step procedure with complete parts list and also where to buy kits and components at discount prices. Trail or mini cycle plans, $2.00 each, both for $3.50 postpaid. From Go-Cycle Company, 4463 Coronet Drive, Encino, Calif., Dept. CW.

HAP JONES HANDLES VARTA BATTERIES

Hap Jones Distributing Co. has added the famous Varta batteries to its range of motorcycle parts and accessories. Varta, oldest and largest German battery manufacturer (established in 1888), reports a construction feature that greatly extends battery life. A rubber cushioned rod is built into the cell covers and is pressed down by the cover, preventing movement of plate sets and avoiding mechanical destruction of the plates due to vibration. Varta dry-charged batteries are available for all types of cycles, scooters and karts; dealer inquiries are invited by Hap Jones Distributing Co., 2 Clinton Park, San Francisco 3, Calif.

One corner of the 24,000 square feet of two-wheeled facilities.

Long Beach Honda Agency with 24,000 square feet of cycle service and sales area opens.

Part of showroom displays at Long Beach Honda.

Red Ludford, AMA District 37 Sports Committee President and Long Beach Honda Parts Manager.

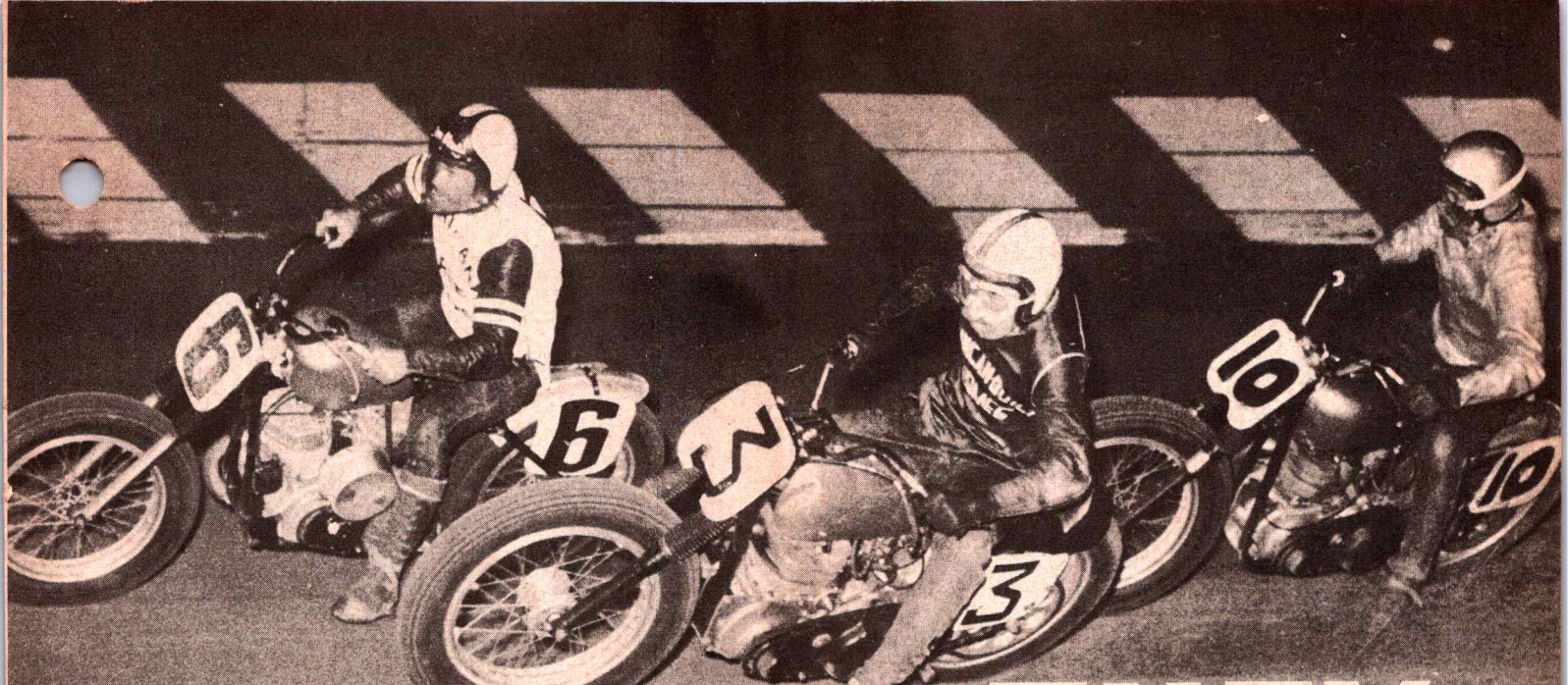
Ribbon cutting ceremonies, left to right, Don Spargur, Svc. Mgr., Jack McCormack, Sales Mgr., K. Kawashima, V. Pres. American Honda, Virgil Sponburg, Long Beach Dist. & City Councilman, Frank Stone, Gen. Mgr. Long Beach Honda.

Opening of the Long Beach, California Honda agency recently marked the debut of the largest two-wheeled motoring center in the U.S. The spacious agency has over 24,000 square feet of sales and service facilities at 5105 Atlantic Ave. with a display area for over 50 vehicles, a 5,000 foot demonstration area and a quarter acre of parking area, according to General Manager Frank Stone.

The formal opening included a ribbon cutting ceremony with sports and film personalities and Long Beach civic officials attending plus a drawing for a Honda machine. The new agency will handle the complete line of 13 bikes made by Honda Motor Co., Ltd., of Tokyo.

Both in its size and merchandising methods Long Beach Honda is something quite new in the motorcycle field. The Agency's service, parts and accessories departments will provide service and materials for all makes and models of bikes. General Manager Stone has a background of more than 17 years in motorcycling; he has been a writer and publisher in the cycle field and most recently was Advertising Manager for American Honda Motors. Parts Manager Red Ludford is a top competition rider, Service Manager Don Spargur is well known as a Southland competition rider. Charles Schott, Assistant Mgr., is the former editor and publisher of Motorcycling News and an active rider in cross country events.

Clarence Clay, Credit and Sales Manager is an experienced automotive executive. Stone revealed that the firm is formulating plans for regular monthly outings and excursions, including hunting and fishing trips, open to all motorcycle enthusiasts.



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National Champions, Don Hawley #6, Al Gunter #3, and Neil Keen #10, are CYCLE WORLD subscribers. They want the best in technical features, comprehensive road tests, what's new in cycling, competition reports, European news, and they were three of our first subscribers. (As well as Clark White and Dick Dorresteyn on this month's cover.) Take advantage of the special introductory offer of only $3.00 for the first year. Fill out the coupon below so you will have something to look forward to each month. Special offer expires January 31st, 1962.

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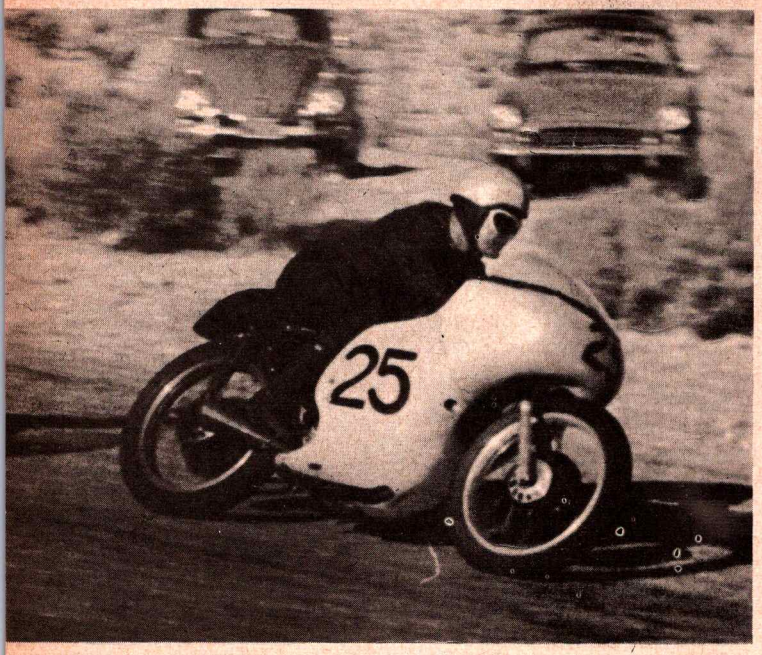
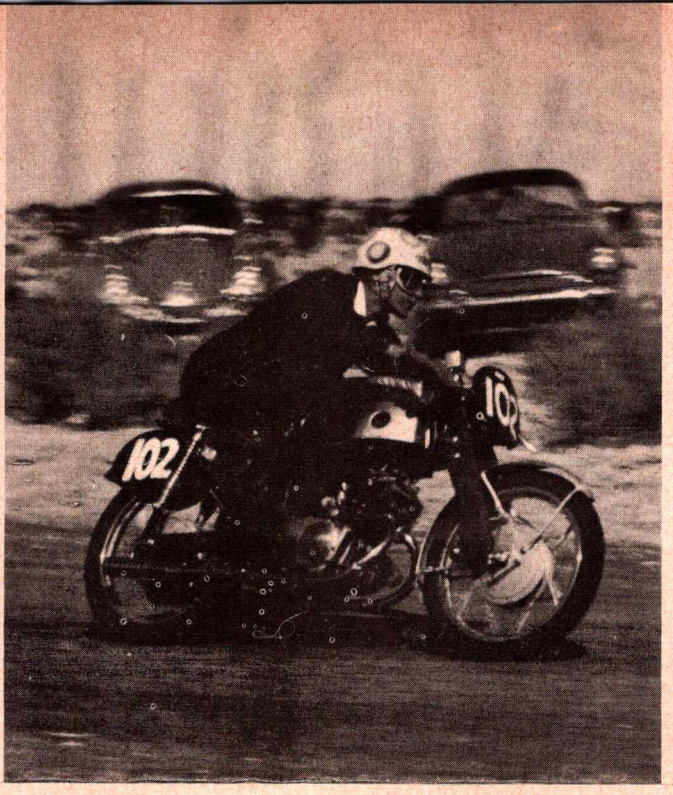
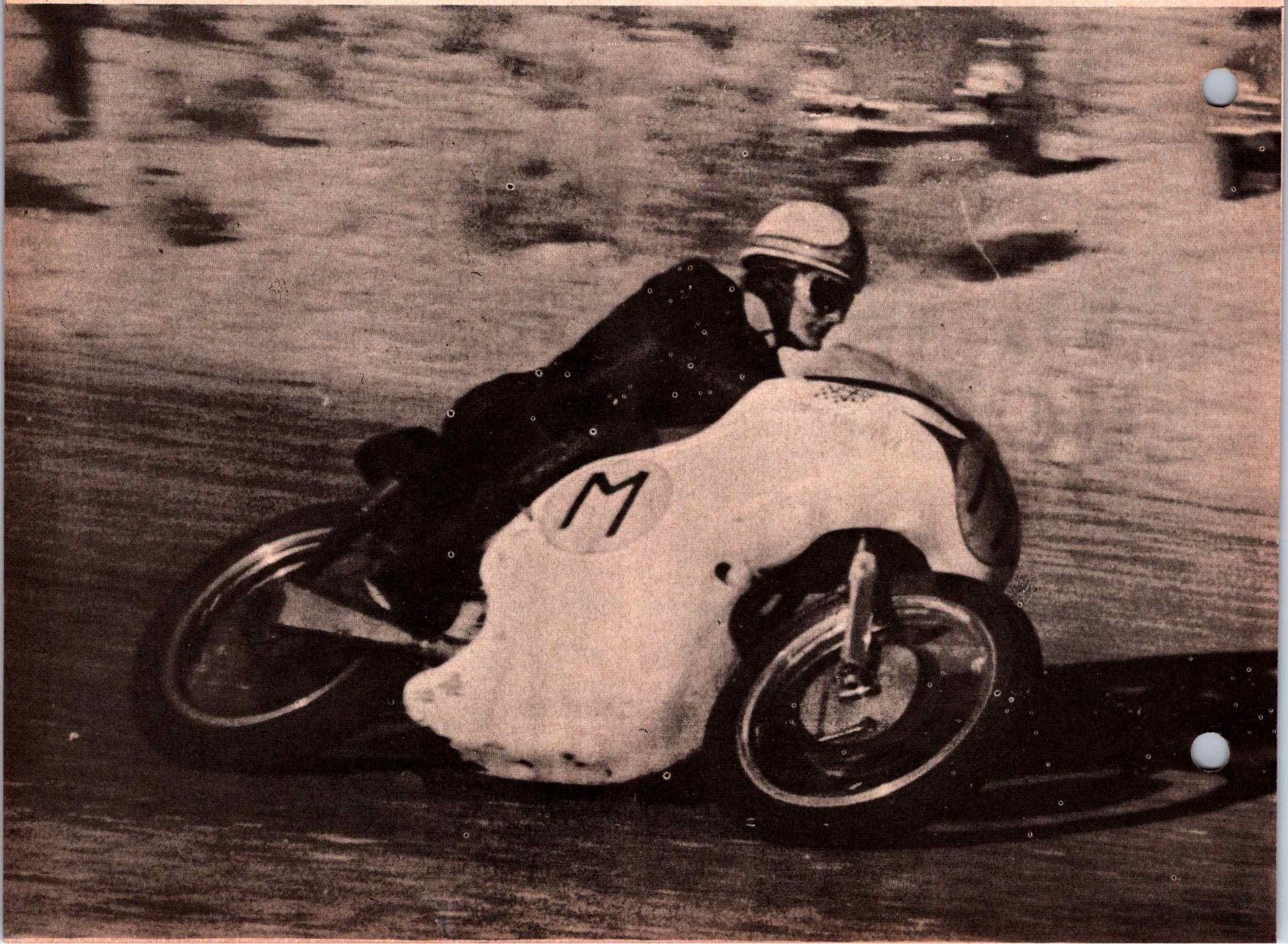


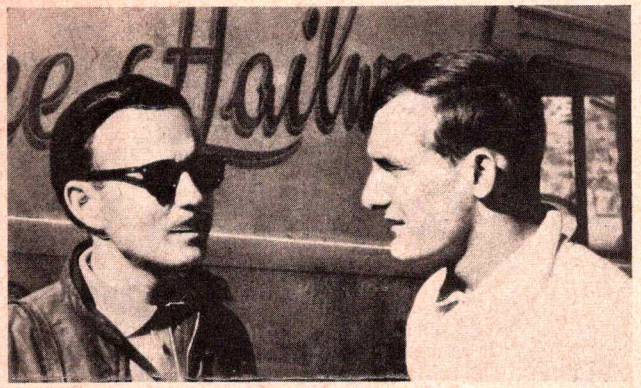
McLaughlin at speed



Mary McGee on her Honda, the only lady rider competing, and she does set the style for the boys.



CYCLE WORLD's Editor (left), renews an acquaintance with England's Mike Hailwood first made at the '59 Isle of Man.



USMC INTERNATIONAL GRAND PRIX

World's Champion Mike Hailwood shows the way around the Rosamond Raceway in the first U.S. appearance of the British Isle of Man TT Triple Winner

PHOTOS BY BOB WILKERSON

RIDERS representing the United States, Canada, South Africa, Guatemala, Germany, Ireland and Italy assembled at the Rosamond International Raceway on the desert outside of Los Angeles for the first running of the United States Motorcycle Club's Grand Prix.

Star of the weekend, and the most important entrant was England's Mike Hailwood, triple TT winner at last year's Isle Of Man. He brought his I.O.M. Norton with him and literally ran off with the 500cc event, being pressed only briefly by California's John McLaughlin riding a Matchless.

The fantastic Hailwood had just completed an International racing tour that brought him the World's Motorcycle Championship; he and South Africa's Paddy Driver had driven from New York in Hailwood's van and were returning via Miami the next day. A disappointingly small crowd braved a dusty and windy day to witness the second running of a cycle event in the United States with competitors from all over the world. The last such event was at Daytona, Florida, last March.

Sunday's racing began with the 250cc and 175cc bikes staging a 38 lap race that saw John McLaughlin, mounted on the remarkable Honda 4, come home the winner after Ed Kretz Jr. on a like machine went off of the road at the first turn on the first lap. Honda rider Don Vesco failed to finish.

The big bore 500cc start was a spectacular one as the "run and bump" artists Hailwood and Paddy Driver dashed into a solitary lead on the first lap. As the two Englishmen came around completing their first lap almost side by side, the rest of the field was hundreds of yards behind. Hailwood and Driver had started in the 6th row and were 1, 2 into the first turn. Driver passed Hailwood and led him for 6 laps but the 21-year-old Champion regained the lead on the 15th lap and ran on, with the two staging a beautiful duel until Driver went out on the 24th lap leaving Hailwood out in front and alone to the end of the 50 lap event.

After having had a bad start John McLaughlin worked up at one point to within 6½ seconds of Hailwood but he dropped out on lap 29 with a frozen gear box on his Matchless. When he left the race, McLaughlin was only 9 seconds behind the leader.

There were several spills, none serious. German rider Oswald Auer broke his ankle in a fall.

Though the racing was a success, CYCLE WORLD was disappointed to see such a poor turnout for an exciting contest. Truly International motorcycle competition in the U.S. took a giant step forward at Rosamond, and a fair size step backwards. We would like to have seen the entire motorcycle fraternity turn out to witness the World Champion Hailwood. It must have been somewhat amusing to Hailwood who is accustomed to seeing crowds in excess of 10,000 at almost every European Grand Prix. We offer the hope that the next race for which a group of International riders can be assembled will be received in a truly International manner.

Continued on Page 48

CORRIGAN VILLE SCRAMBLES

Determined group of 500cc compsters dig into a tight turn. Velo-mounted Harold Grady (28) leads Ken Duvall (975), Robert Koeb (823) and Bill Hair (197).

PHOTOS COURTESY MOTORCYCLING NEWS

Corriganville, site of countless western movie sagas, hosted drama of another type as the second annual two-day Scrambles Grand Prix was presented against a background of the Old West at movie stunt man "Crash" Corrigan's famous ranch in Santa Susana, California.

Saturday's lightweight events consisted of three ten-lap events over the winding, 3.8-mile course with Chuck Petty taking the overall win and 175cc honors while Craig Cox barely beat out Dennis Guildehaus to grab the 125cc class. All rode Hondas. In the 200cc division, Tom John bested fellow Triumph rider Ron Glasgow and desert ace Bill Messer (Jawa) led Doug Christopher (BSA) to the checkered flag in the 250cc ranks.

Sunday's activities were hampered by strong, gusty winds but the elements didn't deter Dave Ekins from taking first place in the 350cc class, after a hotly - contested battle with Stu Peters. Ekins and Peters were both Honda-mounted.

Bud Ekins (Tri.) made his first start since competing in the International Six Days Trial a winning one, repeating his victory of last year in the Corriganville 500cc event over Don Spargur (BSA), Jim Hunter (BSA) and Harold Grady (Velo).

Eddie Mulder again came from behind on his Triumph to take the open class main event although Matchless-mounted Dusty Coppage held a multi-lap lead and threatened to upset the odds-makers until late in the race. Third spot went to Steve Lydecker (Tri.), fourth was Don Surplice (Matchless).

Aside from Mulder and Ekins, only compsters to repeat their 1960 victories were sidehack aces Ray Prettyman and Roy Sampson. Pilot Prettyman turned in a magnificent job of guiding his winning rig over the rough terrain and received well-earned plaudits from the crowd of some 2,300. The Dirtdiggers Motorcycle Club is once more to be congratulated for presenting a well-organized, smooth-running program.

RESULTS:

125cc Class

1. Craig Cox	Honda
2. Dennis Gildehaus	Honda
3. Don Alfred	Honda
4. Bud Aronson	Honda

175cc Class

1. Chuck Petty	Honda
2. Gene Sandberg	Maico
3. Bill McClelland	Honda
4. J. Kirby	Maico

200cc Expert Class

1. Tom John	Tri.
2. Ron Glasgow	Tri.
3. Gary Bailey	Tri.
4. Jack Binning	Greeves
5. J. Kukta	Tri.

250cc Expert Class

1. Bill Messer	Jawa
2. Doug Christopher	BSA
3. Walt Axthelm	Honda
4. Gary Conrad	Greeves
5. Dusty Coppage	Dot

21" Expert Class

1. Dave Ekins	Honda
2. Stu Peters	Honda
3. John Rice	BSA
4. Wayne Hixon	Velo.
5. Wayne Padgett	BSA

500cc Expert Class

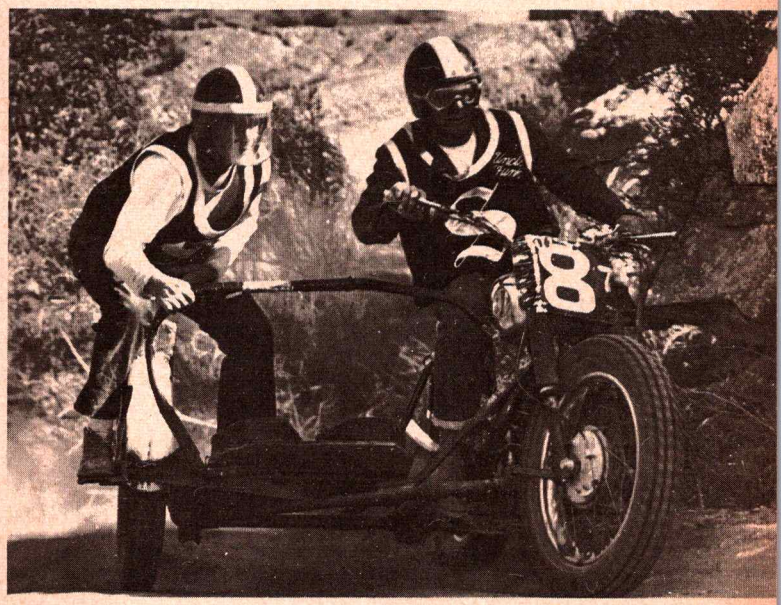
1. Bud Ekins	Tri.
2. Don Spargur	BSA
3. Jim Hunter	BSA
4. Harold Grady	Velo.
5. Dick Vick	Match.

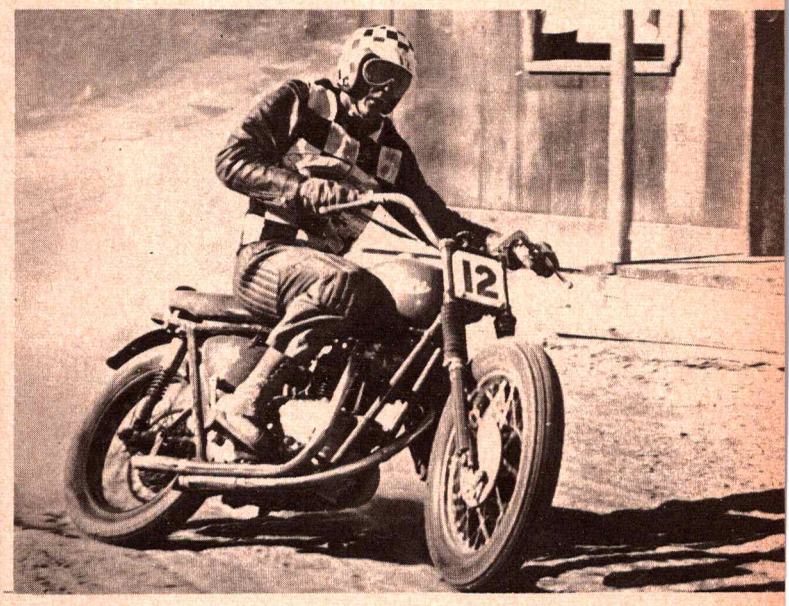
Open Expert Class

1. Eddie Mulder	Tri.
2. Dusty Coppage	Match.
3. Steve Lydecker	Tri.
4. Don Surplice	Match.
5. Dalton Holliday	Tri.

Tom John tooled his Triumph to first place in 200cc class.

Spectacular sidehack exhibition was a crowd-pleasing Corriganville highlight. Pilot Ray Prettyman and passenger Roy Sampson displayed real teamwork in winning 4-lap event.

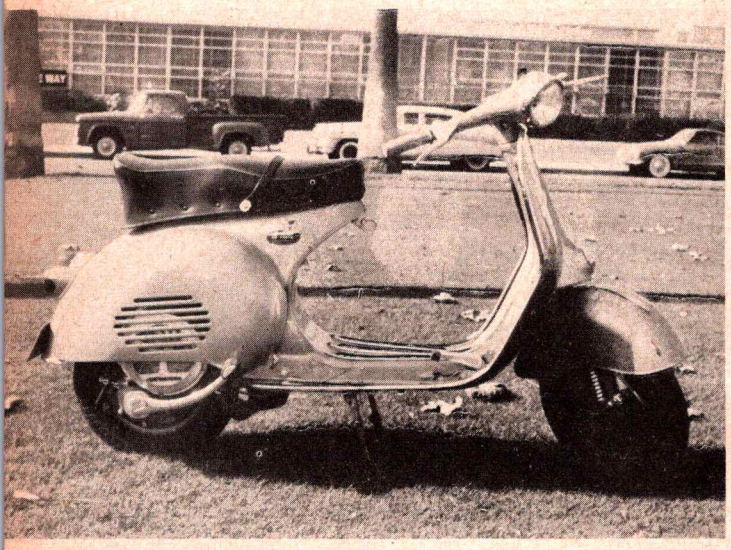


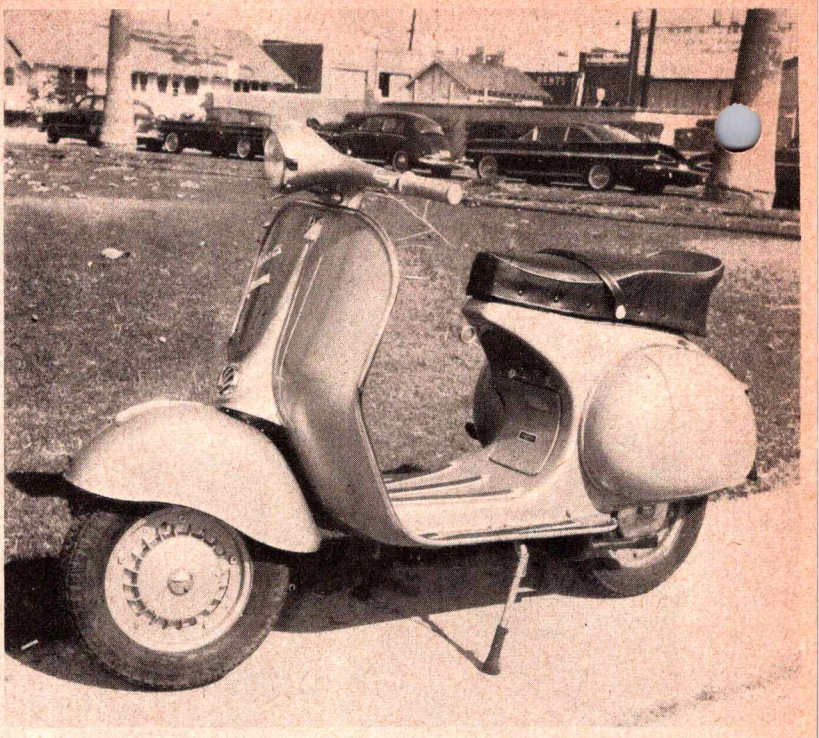


Open expert main event winner Eddie Mulder blasts around corner of Corriganville "Old West" street on way to victory.

Doug Christopher had the lightweight main event sewed up until taking a spill on the last lap. He remounted and continued, finishing second to Bill Messer.

The Vespa 150cc Grand Sport, deluxe transportation in the scooter class. Performance is a salient factor.





SCOOTER TEST: VESPA GRAND SPORT

And Grand Sport it is, plus luxury and comfort.

Cushman Motors, a subsidiary of the Outboard Marine Corp., in Lincoln, Nebraska, have for many years been the manufacturers of an excellent line of motor scooters and are the U.S. distributors for the Italian-built Vespa scooters.

CYCLE WORLD was loaned a sparkling new Vespa Grand Sport for our first scooter test by Ed Kretz from his elaborate agency in Monterey Park, suburb of Los Angeles. The Grand Sport is the deluxe version of the Vespa line, and it most certainly is deluxe.

The finish and detailing on the shell and other outer body panels is beautiful; it is painted in a metallic silver with a tasteful amount of chrome trim. The Vespa reflects the touch of a designer everywhere you look, exemplary of most Italian products where details and finish are given thought.

The first impression of any machine is an important one, and our initial run on our testing grounds was a pleasant surprise; the Vespa is so quiet and smooth it is difficult often to convince yourself you are really riding on a scooter. The pleasant ride, of course, comes from the soft, almost springy, suspension. Hardly a bump is felt at any time. The little 150cc two-stroke is marvelously quieted by a surprisingly small muffler visible on the under side of the under pan.

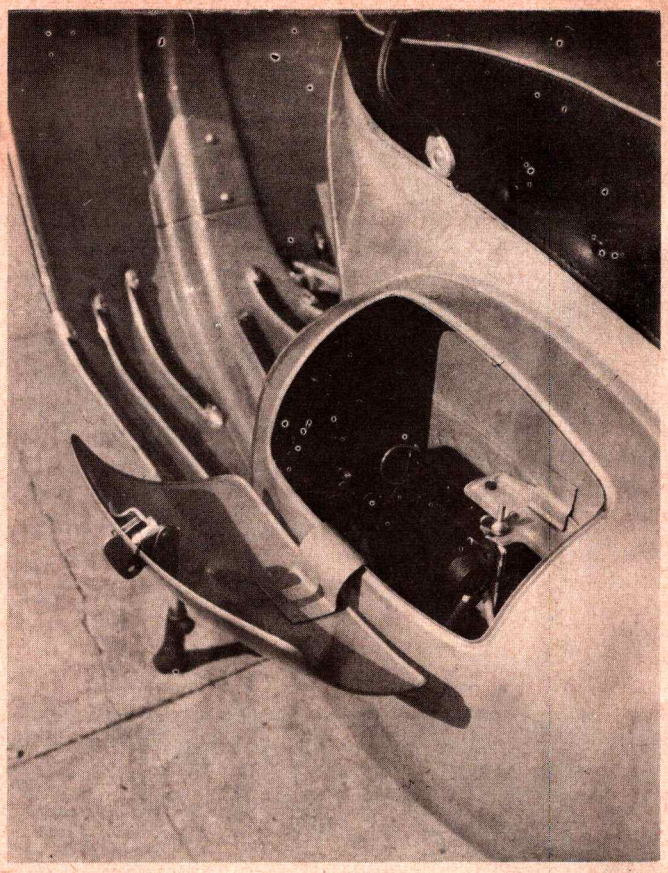
Construction is of the welded pressed steel monocoque type, common in Europe for many years and recently being applied to American automobiles. One important feature of this method of construction is its lack of rattle or squeaks due to the absence of nuts and bolts working loose. The Vespa had a solid feel usually not associated with vehicles of this sort.

The 6" dia. brakes are excellent on the Grand Sport. Severe applications under panic conditions produced very little fade and the ease of application imparts a considerable degree of confidence in them. Gear changing is via a twist grip selector coupled with a standard motorcycle type clutch lever, both on the left handlebar grip. It is with this system we found the Vespa's only fault. It is often difficult to find the proper gear, especially when shifting down, (or back), into a lower gear, as it is too easy to simply go past the gear and end up in the wrong one. Or neutral.

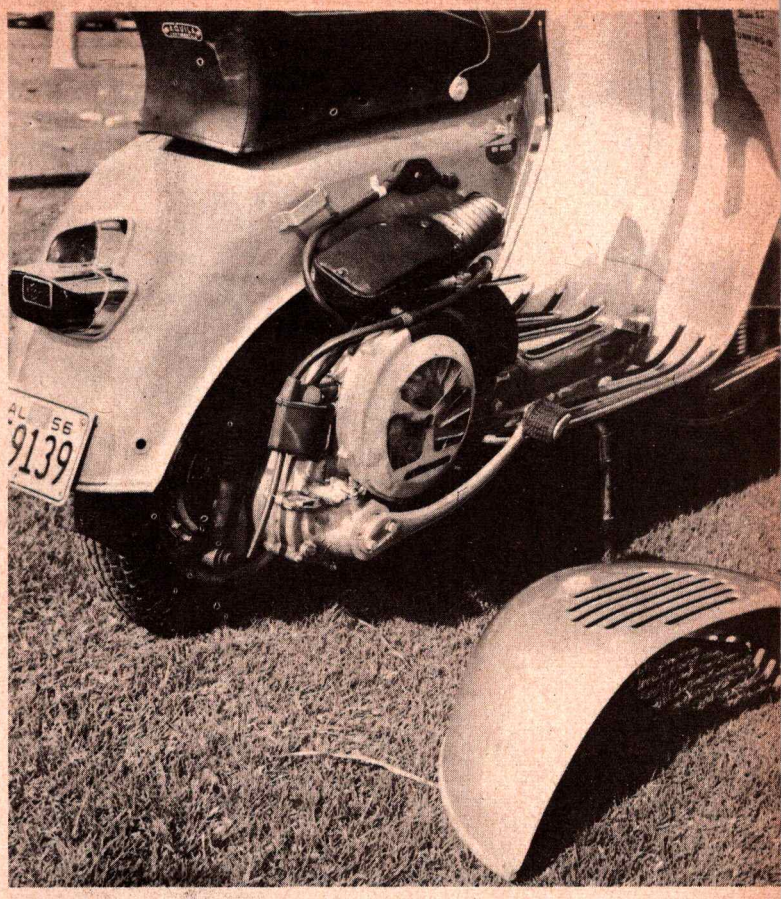
One CYCLE WORLD staff member got so involved trying to get it into 2nd gear he almost ran off the road. Like most things changing gears on the Vespa becomes easier with practice and after a few hours of riding it is quite simple and becomes a more or less natural shifting method.

The rider of a conventional cycle will find several surprises on the Grand Sport, and one important one is that this scooter takes a back seat to very few bikes of equal displacement. We were constantly amused at the faces of other riders, and car drivers as well, when they witnessed the performance of this bomb. As with most motor scooters, their small wheels make them somewhat on the unstable side but this is a fact the rider has to keep in mind and not attempt to throw a scooter around like a full size motorcycle.

Maximum speed with the Grand Sport is nearly 70 mph, and it gets there in no time at all. Fuel consumption is 80 mpg, the fuel tank holds 2.5 gallons. An excellent lighting system and a clearly audible horn add the finishing touches to a truly well made machine.

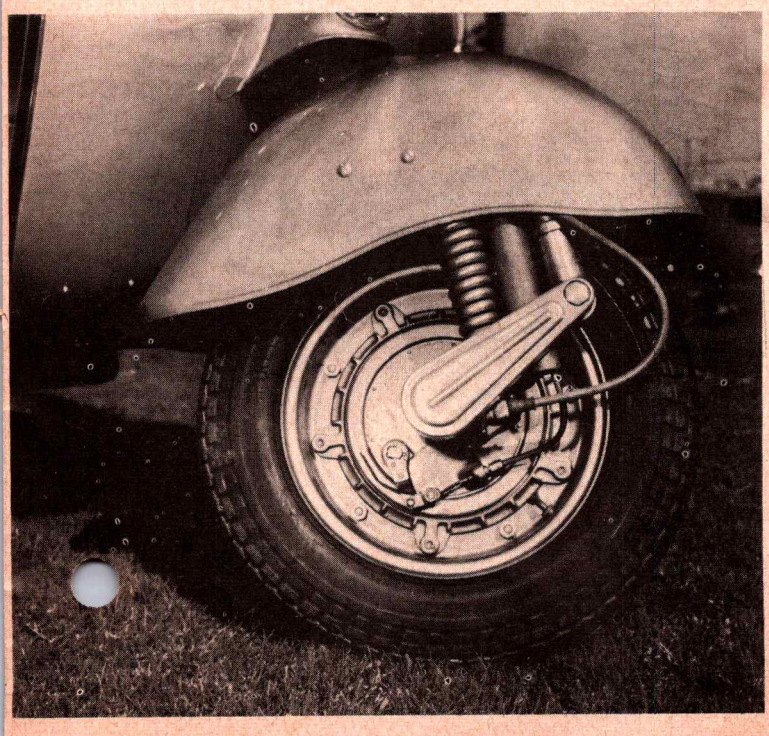


Neat compartment is designed for storage, but most of it is taken up by electrical equipment.

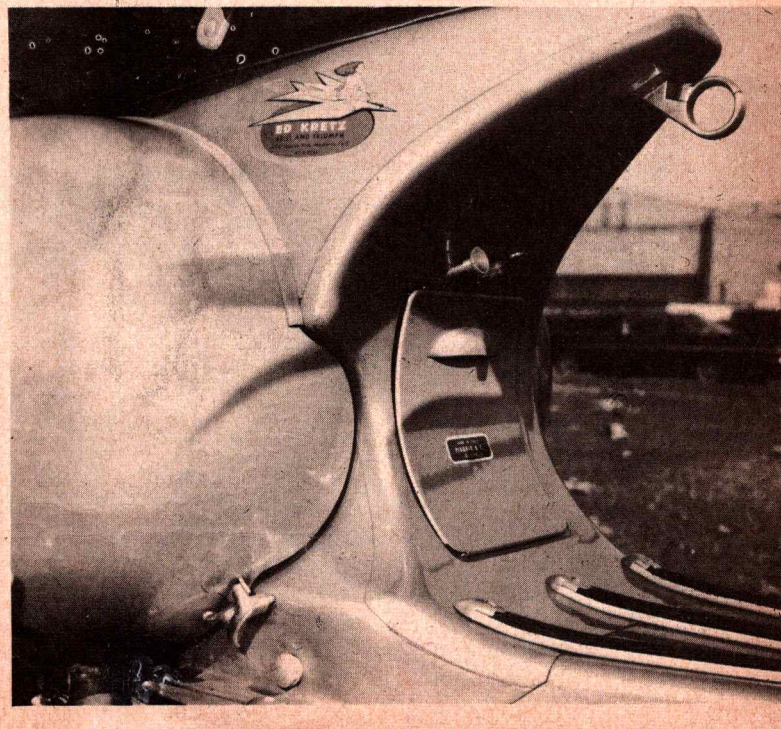


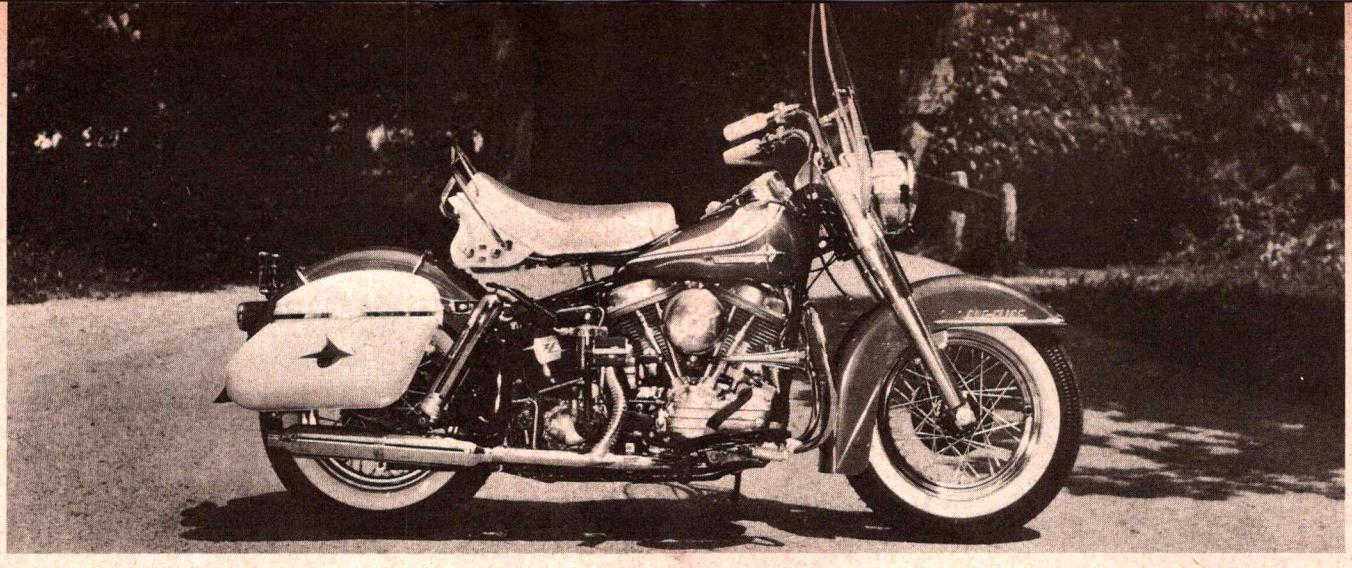
Engine accessibility is excellent. Square black box is air cleaner. Shock/spring unit can be seen.

Unique trailing arm front suspension is a bit on the soft side; cable drives speedometer.

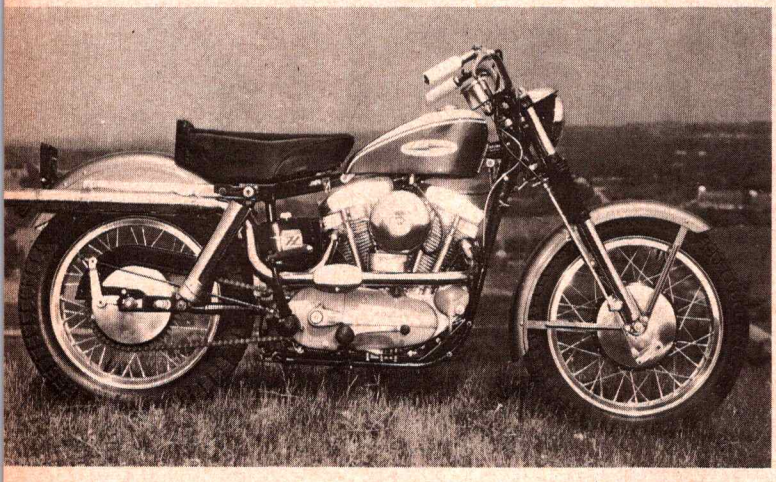


Beautiful detailing everywhere. Choke and fuel shut-off are mounted above fuel filter access door. Note rubber tread strips on floor.

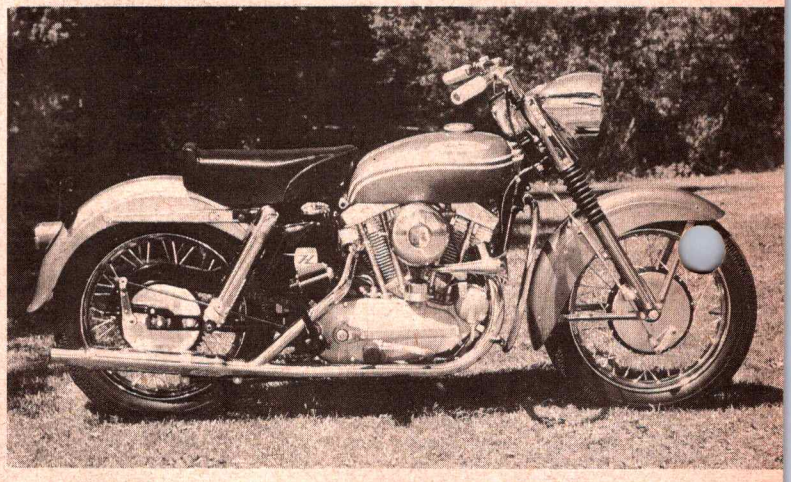




DUO-GLIDE

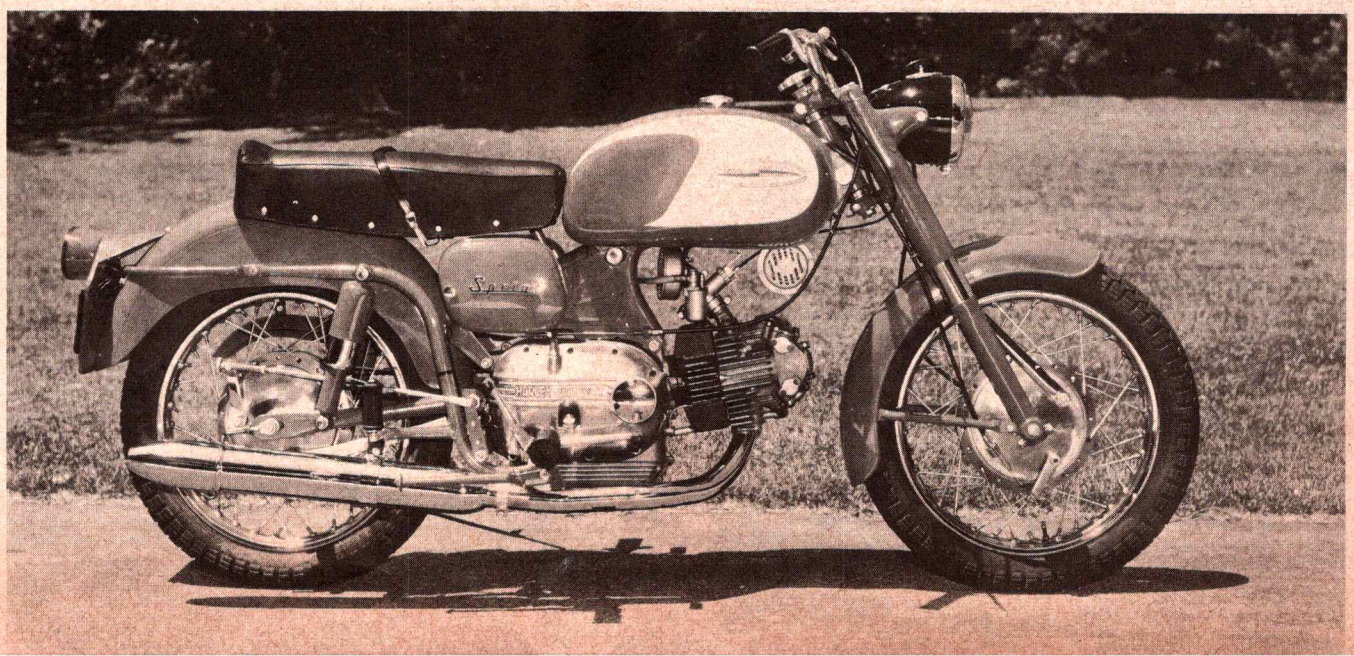


SPORTSTER CH



SPORTSTER H

SPRINT 250



HARLEY-DAVIDSONS FOR 1962

A trio of new lightweight motorcycles highlight the 1962 Harley-Davidson Motor Co. line of models, named Pacer, Scat and Ranger. The three new models are powered by a single cylinder, 175cc, two-cycle engine and share the same basic frame and suspension components. Each, however, is tailored for a different type of riding.

PACER is primarily a road machine; it features 16" wheels, full fenders, lights and a horn.

SCAT is a dual purpose machine for sport riding on or off the road. It has bobbed fenders, high level exhaust system, 18" wheels for greater ground clearance and off-the-road tread tires. It is also furnished with lights and a horn.

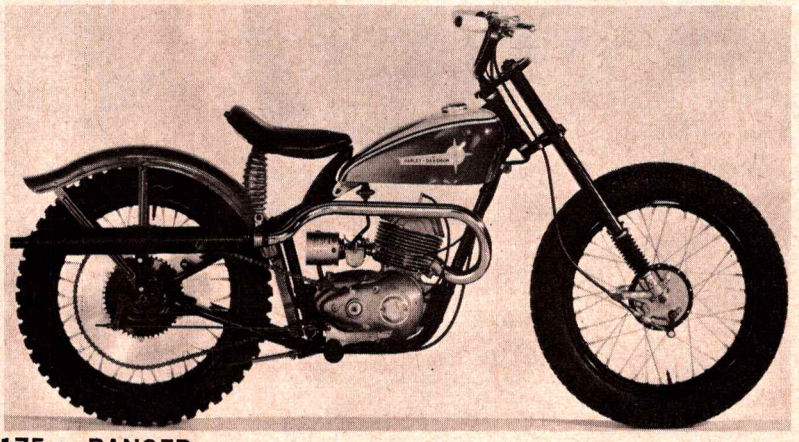
RANGER is designed strictly for off of the road use. Like the Scat it has a high level exhaust system, 18" wheels plus a special rear tire and low gearing for rough terrain. The engine displacement is reduced to 165cc in this model.

Another lightweight in the Harley-Davidson line is the Sprint 250cc bike made by the Company's Italian affiliate, Aermacchi Harley-Davidson. The Sprint is powered by a 250cc, single cylinder, four-cycle ohv engine and is designed for all around use. New design features for 1962 include a waterproof circuit breaker, automatic spark advance, kick starter sector gear designed to disengage at the bottom of the stroke and extra sturdy wheel rims.

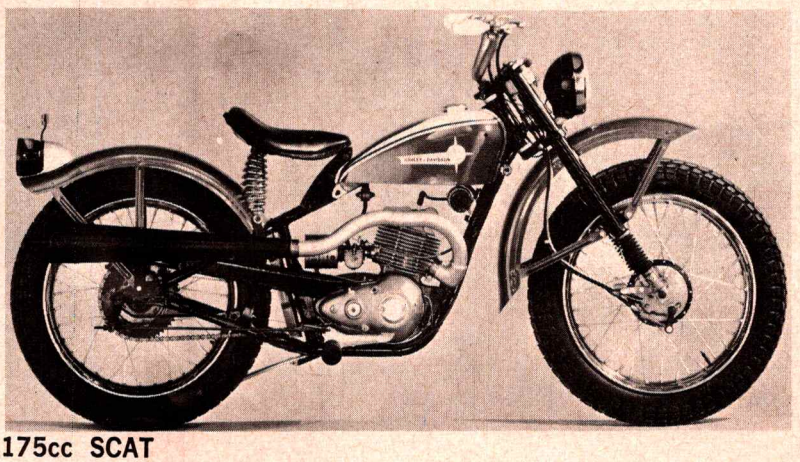
In the large classes the new line features three bikes in the V-Twin, four-cycle ohv category. They are the Duo-Glide, 1200cc, and two Sportsters with 90cc engines. The Duo-Glides continue in their familiar line of highway bikes featuring the FL series or the super powered FLH series.

The two Sportsters, the "C" and "CH" models, have similar frames, suspensions and high performance engines, but they are designed for two different purposes. The Sportster H is primarily a road machine and has full fenders and a larger gas tank. The Sportster CH is designed primarily for off-the-road competition and uses shortened fenders, high level exhaust system, off-the-road tires and magneto ignition. Both models employ the new aluminum upper fork brackets for lighter weight.

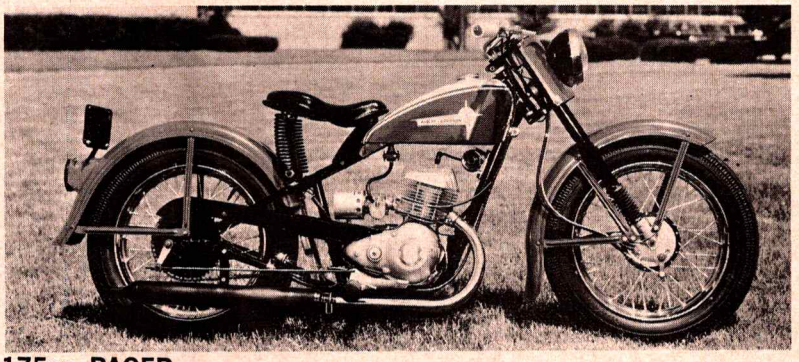
Rounding out the 1962 H-D line is the Topper H motor scooter with automatic transmission. It features a fibreglass body, "tuned" exhaust system, large wheels, lights, etc. It is powered by a 10 cubic inch, 165cc, single cylinder, two-cycle engine that will deliver up to 100 mpg. Optional equipment for the Topper H includes a utility box for cargo and a one passenger side car.



175cc RANGER

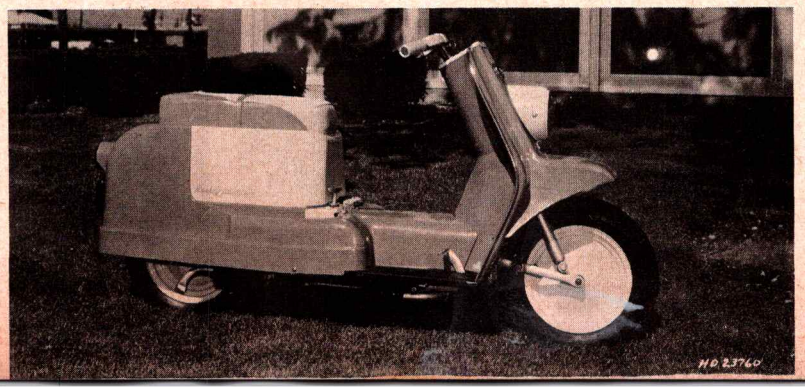


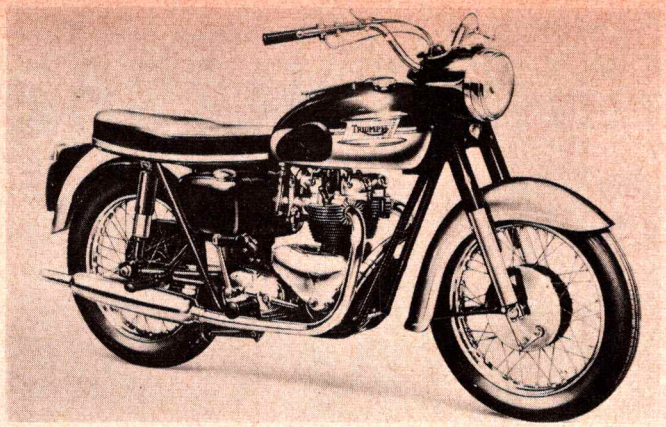
175cc SCAT



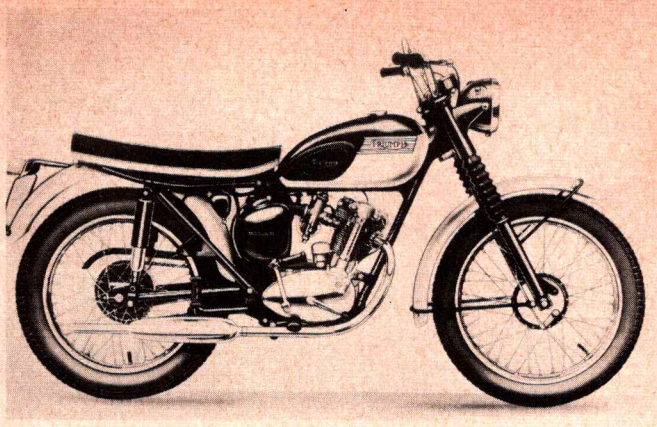
175cc PACER

TOPPER H

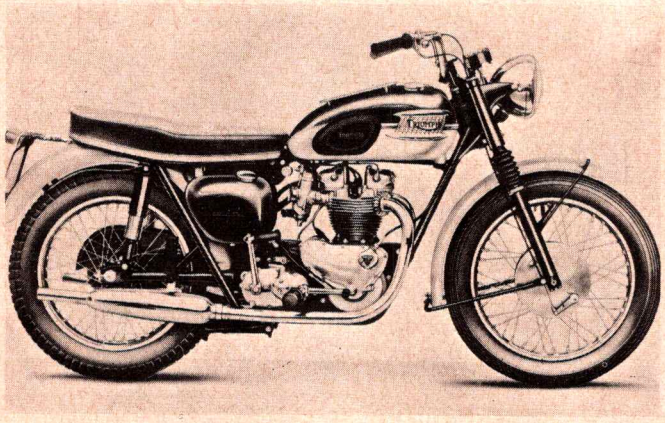




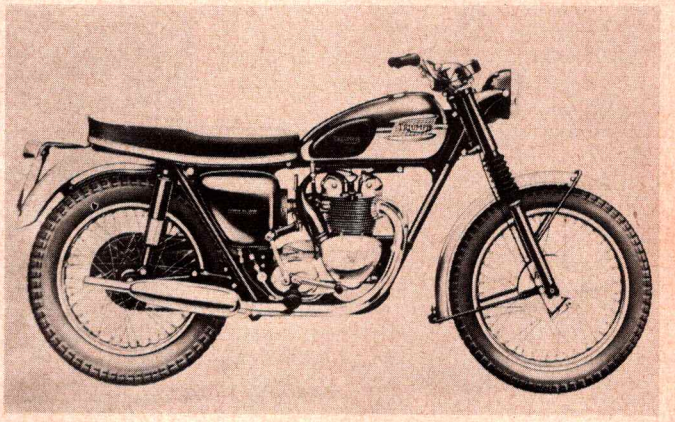
THUNDERBIRD 6T



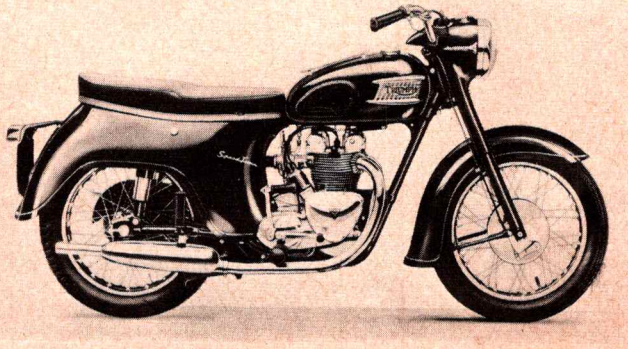
SPORTS TIGER CUB T20



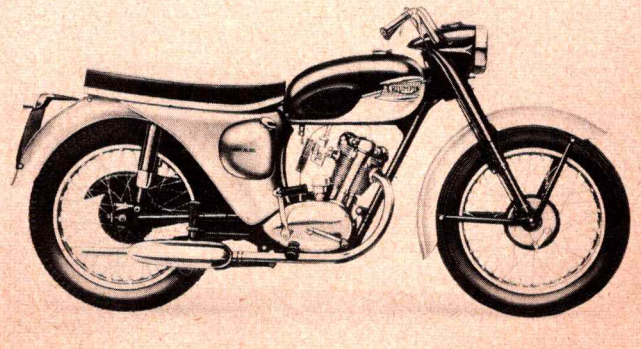
BONNEVILLE T120



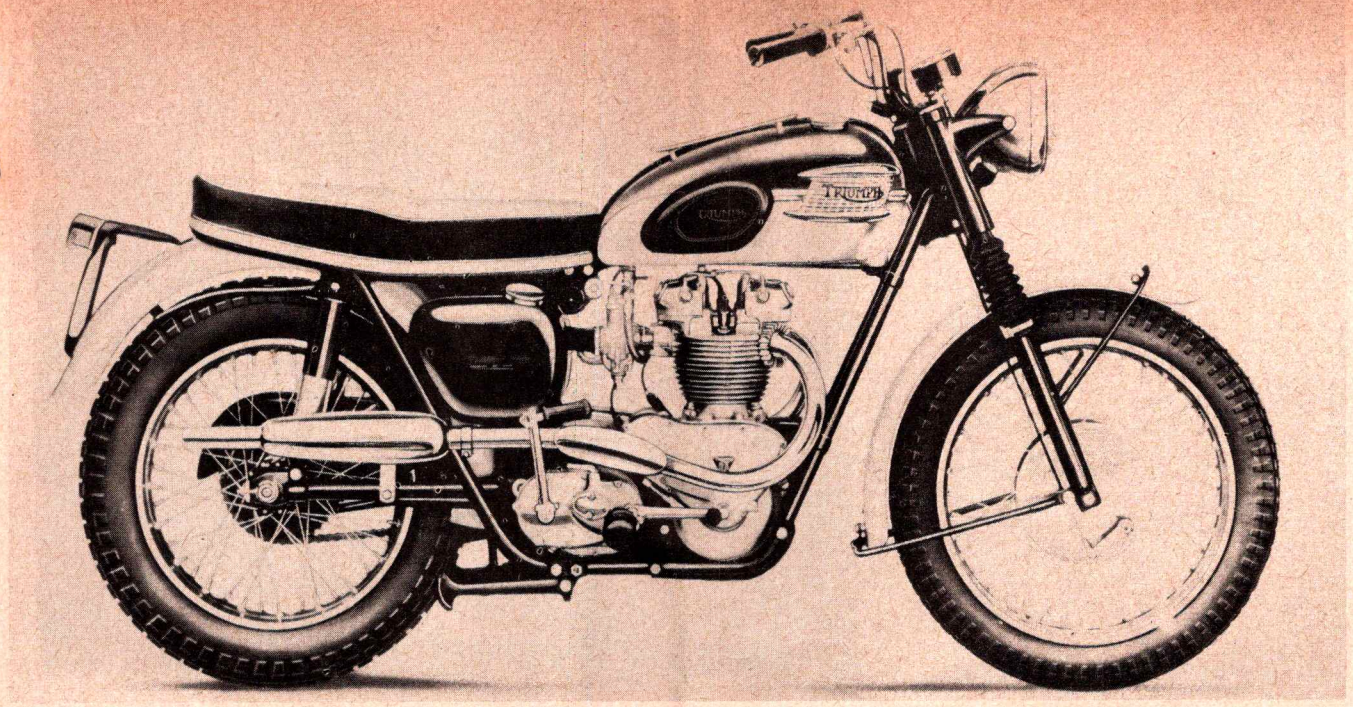
T100 SPORTS



SPEED TWIN 5T/A



TIGER CUB T20



TROPHY TR6

TRIUMPHS FOR 1962

The 1962 range of Triumph has been consolidated to embrace ten models especially suited to U.S.A. requirements. New polychromatic finishes and technical refinements highlight the new line.

Last year, Triumph introduced sixteen models: Five 200cc lightweight Tiger Cub models; Five 350cc and 500cc mediumweight models; and six 650cc medium heavy models. With all of the sixteen 1961 models being consolidated into ten models for 1962, it should help to eliminate confusion arising from having too many models similarly equipped.

The 1962 range is divided into three categories; The A range consisting of two lightweights, the B range embracing five medium heavyweight models, and the C range encompassing three mediumweight models.

"A" RANGE, TWO MODELS TIGER CUB T20

Engine 200cc o.h.v., 10 b.h.p. at 6,000 rpm, engine and 4 speed, foot operated gear box integrally. New type Amal 32/2 carburetor is standard. A new and improved cast iron oil pump has been added. 90 to 100 mpg. Hydraulically controlled front and rear suspension, equipped with Dunlop street tires. Lucas battery-coil ignition. 5 hp model available for use in States with regulations governing 14 year old operators.

SPORTS TIGER CUB T20's

Engine same as Tiger Cub with addition of special camshaft, higher compression and larger carburetor, rated at 15.5 hp. Features 19" front and 18" rear wheels for added ground clearance for use in rough territory. Front suspension is heavy duty and is the same as on the C range models. Electrical system operates under energy transfer (no battery) and direct lighting. Optional equipment includes sports or trials tires, tachometer, special lighting and exhaust systems. Standard equipment includes a dry element air filter; technical improvements include the new oil pump and carburetor as on the T20.

"B" RANGE, FIVE MODELS
THUNDERBIRD 6T

650c ohv vertical twin, alloy cylinder head. Virtually the same as 1961 with new colors available. New features on the Bonneville, as well as the entire "B" range are: A new tape angle fuel outlet sealed with "0" rings, an electrical system employing a closely regulated alternator in separate variations for magneto-alternator and AC coil ignition, stiffer heavy duty clutch and brake cables. The Thunderbird utilizes a new special two-in-one exhaust system on the right side with a new and larger muffler.

BONNEVILLE T120

The Bonneville models are now offered in two dual carburetor versions, one for highway use and the other for competition. The T-120R, the highway version, is capable of 110 mph and features a tachometer as standard equipment. The new T-120C varies only slightly from the highway model in that it is equipped with Dunlop Trials Universal tires and an upswept dual exhaust system for racing.

TROPHY TR6

The third machine in the Triumph "B" range is identical to the Bonneville model in appearance except that it mounts a large bore single Amal Carburetor for more flexibility.

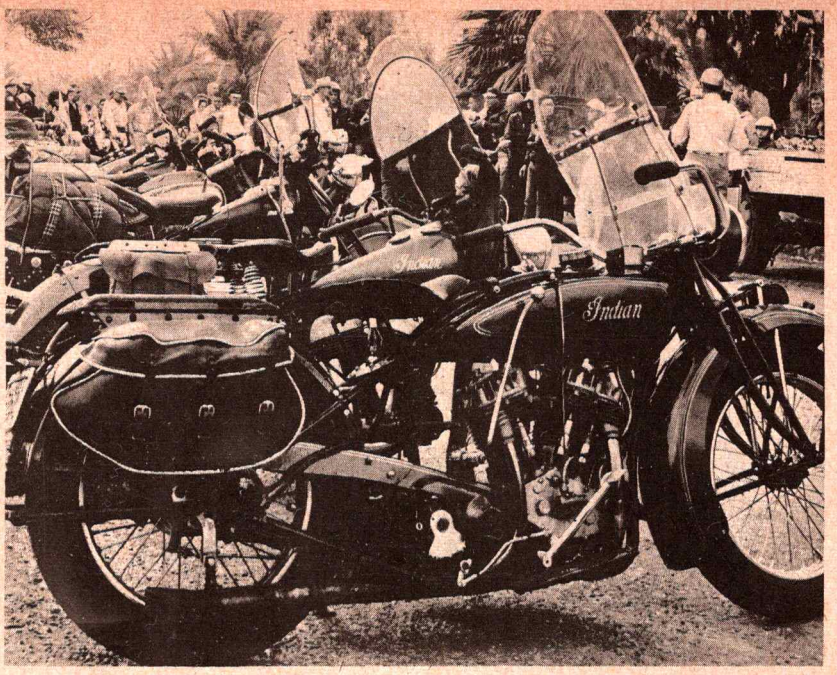
"C" RANGE, THREE MODELS
SPEED TWIN, 5T/A

Ignition in the famous low silhouette Speed Twin is by the new Lucas AC type with battery and coil together with fully rectified lighting. A 350cc version is available on special order. New technical features on the Speed Twin, as well as the other bikes in the "C" range are: A new Lucas ammeter and the continuation of the improved energy transfer (batteryless) igition; a new exhaust camshaft arrangement for the T-100 for more efficient high speed operation; new and stiffer control cables.

T100 SPORTS

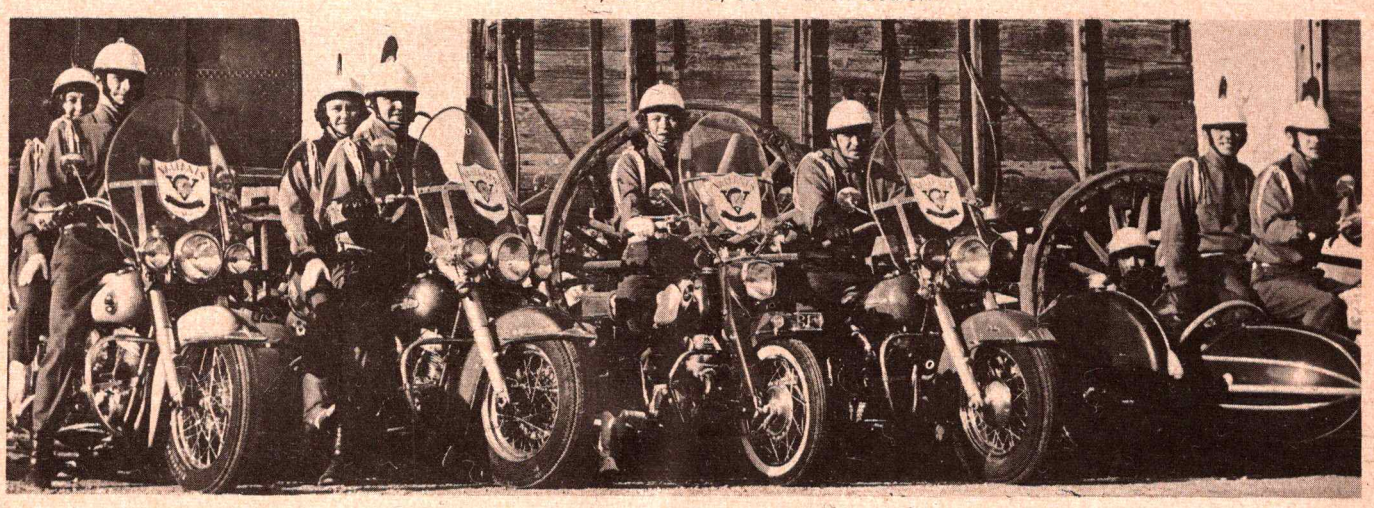
Two models of the Sports Tiger 100 are offered for 1962. The T100S/R and T100S/C are both powered by the new unit construction over-square (short stroke) engine developing almost 40hp at 7,000 rpm. It is identical to the Speed Twin engine except that sports camshafts, high compression and a larger carburetor boost its performance capabilities.

The T100S/R is the road model with battery AC coil ignition and rectified lighting, it also utilizes a larger fuel tank and a downswept exhaust system. The T100S/C varies from the road model in that it is equipped with AC energy transfer ignition and direct lighting, Dunlop Trials tires, a smaller capacity gas tank and a competition style two-into-one exhaust system. Both the T100S/R and the T100S/C employs 19" front and 18" rear wheels with sports front and rear fenders.



PHOTOS BY CLIFF BOSWELL

Oldest motorcycle in attendance was this beautifully restored 1923 Indian, ridden to Death Valley by owner Irv Seaver, Santa Ana, Calif. BMW dealer.



Valiants of Sun Valley, Calif., won Best Appearing Club trophy. In background is relic of 20-mule team borax team days.

Award for outstanding family group went to Joe and Jean Hughes who made the trip with their 18-month-son, Joe, Jr.

Two examples of horsepower—the hardy prospector's burro and the modern two-wheeler.

Death Valley Run

Touring cyclist gives cheery wave while cruising down sharp grade into Panamint Valley, on western edge of Death Valley.

OVER 2,000 hardy motorcyclists took part in the two-day Seventh Annual Gypsy Tour through California's famed Death Valley.

Riders from Texas, Illinois, Washington, Colorado, Arizona and Oregon joined their California compatriots at Furnace Creek Ranch where, after signing in at the official AMA registration booth, they were treated to a tasty "bean feed" (franks, barbecued beans, cole slaw, apple, cherry or peach pie, ice cream, hot coffee and milk) sponsored by the So. Calif. Harley-Davidson Dealers Association.

Appetites whetted, cyclists spent most of the afternoon touring Death Valley Scotty's renowned Castle, preparing their campsites for the night, or just resting. That evening, National Park rangers presented a well-received one-hour Death Valley show, and following an exhibition of precision riding by the Victor McLaglen Motorcycle Corps, the spotlight shifted to trophy awards.

Nearly 30 snappily-dressed clubs competed for "Best Appearing Group" award and the colorful, well-groomed Valiants of Sun Valley, Calif. were voted this year's number one club. Sweepstakes trophies went to winning riders in the Poker Run competition staged en route to Death Valley, lovely Vivian Gallo was crowned Queen, and then came the humorous-type awards. While amused onlookers applauded their favorites, judges decided winners in the Baldest Head, Fattest Man and Prettiest (Male) Leg contests, winding up Saturday's activities on a light-hearted note.

Though chilly winds prevailed throughout the night, enthusiasts awakened in good spirits and gathered for final trophy presentations. Awards were made in numerous divisions including Best Appearing Male and Female Riders, Best Appearing Motorcycle, Oldest Motorcycle in Attendance, Cyclist Traveling Farthest Distance, and Best Appearing Family Group. Competition was close and decisions hard to reach in each category but all winners were deserving ones and, due in no small measure to the efforts of Death Valley Committee Chairman Dick Hutchins, the Death Valley Run once more goes down as a successful highlight of the Western U.S. motorcycle picture.

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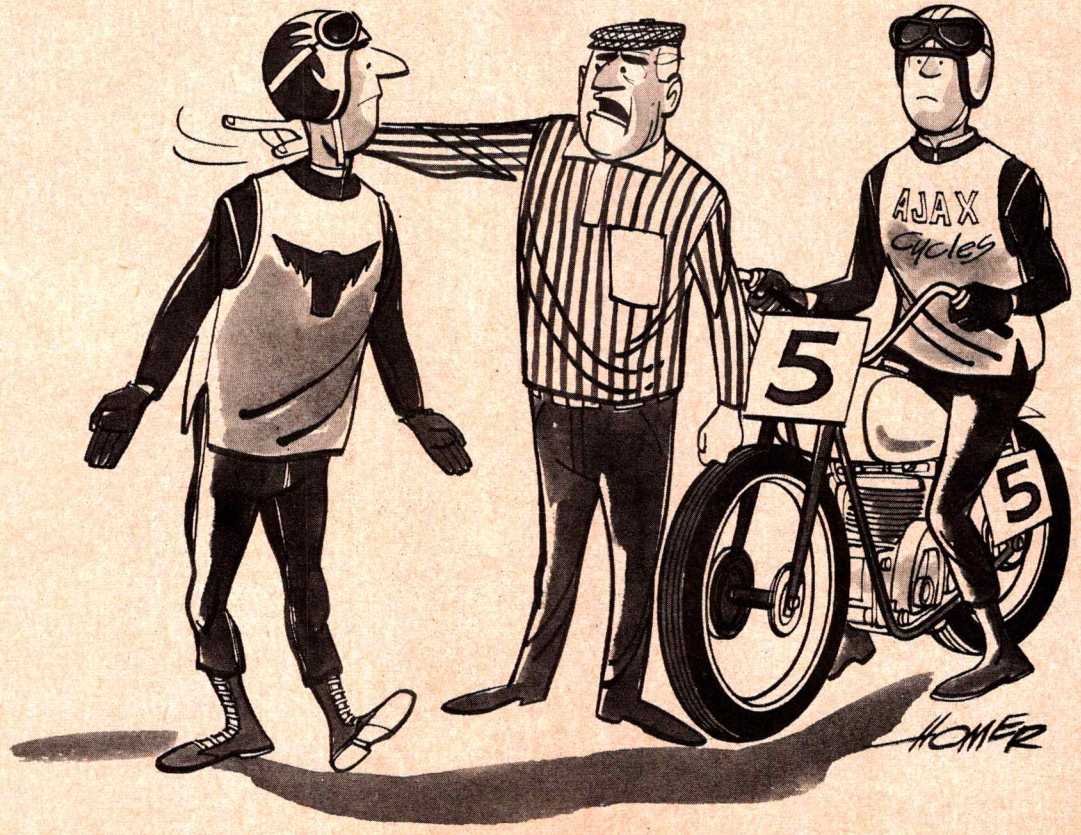

"WHAT DO YOU MEAN YOU 'LOST IT'? GO BACK AND 'FIND' IT!"

other road for that matter. Since it seems our esteemed lawmakers have our interest and safety at heart, a simple rule that a vehicle which would not **perform** above a certain minimum would not be allowed on the freeways would be far more sensible.

BSA, INDIAN AND TRIUMPH JOIN AMA

Carl T. Swenson, President of the AMA, has announced the addition of three new Corporate members. T. A. Hodgdon, President of BSA, Inc., Lawrence Paul, President of The Indian Co., and Denis McCormack, President of The Triumph Corp., were informed of their acceptance into the organization. The three Companies have also become members of the Motorcycle and Allied Trades Organization.

"On behalf of the entire organization", Swenson wrote, "we welcome you into our membership and look forward to a pleasant and effective association in the years ahead. We feel that your presence will further strengthen the objectives of our organization which is devoted to the promotion of motorcycling in all its many aspects."

SIX DAY TRIALS RESULTS

The results are in on the International Six Day Trials, this year run in England and the West Germans were the only six man Trophy Team of the eight entered to finish with no penalties after a last day dramatic retirement by the Czech Team. Our man Bud Ekins, Triumph mounted, came home with a Silver Medal after having had rotten luck on the last day when his gear selector hung up and the repair cost him 12 marks and a Gold Medal.

Runner up Team was the Italians who came close to a win for the first time in 30 years. The Czech four-man team took home the Silver Vase for the ninth time, another Czech team was 2nd. England was 3rd and Finland 4th, all four teams finished unpenalized but were placed in aggregate order by a new bonus point system employed with points scored in 11 special tests.

Of the 271 starters from 15 Nations, 86 failed to finish. Gold medals for completing the event without penalty and gaining at least 500 bonus points were won by 87 riders, one of which Bud Ekins almost was.

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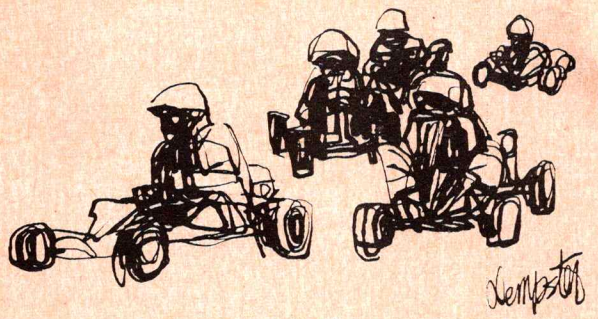

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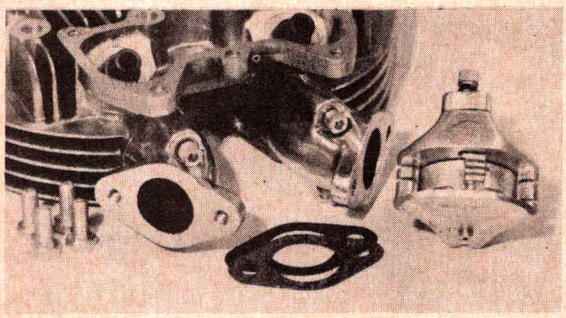

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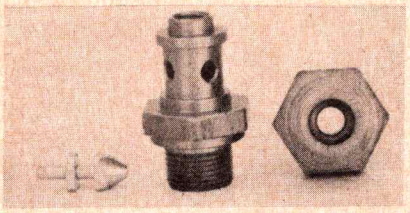

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ARKANSAS

FORT SMITH, Winter's Cycle Shop, 307 Towson Ave., Triumph, BMW, Ducati, Maico.

ROGERS, Ken's Cyclery, Hi-way 71 South, BSA, Honda, Parilla, Ducati.

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DOUGLAS, Cochise Harley-Davidson Sales & Service, P.O. Box 602.

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SACRAMENTO, Motorcycle Service Shop, 2515 Broadway, Triumph, Ariel, Honda, Ducati, BMW, Mustang, Zundapp.

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SANTA ANA, Roy's Motorcycle Shop, 12461 Westminster Ave., Triumph, Honda.

SANTA BARBARA, Santa Barbara Motorcycle Sales, 134 West Carrillo St., Triumph, Honda.

SANTA CRUZ, Santa Cruz Cyclery, 1408 - 41st Ave., Triumph, BSA, Honda.

SANTA MARIA, Santa Maria Harley-Davidson Center, 1129 W. Church Street.

TAFT, Taft Harley-Davidson Sales, 130 Center St., Harley-Davidson, BSA.

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MOLINE, Bill Tuman Motorcycles, 1520 - 3rd, Honda.

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PEORIA, Walters Bros., Harley-Davidson Sales, 1212 S. W. Jefferson St.,

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INDIANA

BURR OAK, Burroughs Cycle Shop, P.O. Box 313, Triumph, Zundapp, Cushman.

HAMMOND, K-G Cycle Shop, 633 Kennedy Ave., Triumph, Honda.

EVANSVILLE, Tri-State Motorcycle Sls., 5908 Boonville Hwy., BSA, Triumph, Cushman.

INDIANAPOLIS, Dreyer Cycle Co., 4152 W. Washington St., BMW, BSA, Honda.

SOUTH BEND, Harley-Davidson Sls., 526 W. Western.

SOUTH BEND, Mac's Motorcycle Sales, 801 Prairie Ave., Yamaha, Royal Enfield.

SOUTH BEND, Paul Merrill Indian Sls., 2202 Western Ave., Triumph, Matchless, Ducati.

IOWA

AMES, Ames Cycle Company, R.R. #2, Harley-Davidson, Cushman.

CEDAR FALLS, Lon Cook Motorcycles, Hwy. 20 West, P.O. Box 184, Triumph.

CHILLICOTHE, Dodge's Triumph Sales, Box 273.

DES MOINES, Lynn's Motorcycle Shop, 1700 E. University Ave., Triumph, BSA, Yamaha, Lilac.

DES MOINES, South Side Cycle Shop, 506 S.W. Mc Kinley, Norton, Ducati, Zundapp, Panonnia.

NEWTON, Russell D. Adams Serv., 403 1st Ave East, Indian, Matchless, Royal-Enfield, Cushman, Vespa, Lambretta.

OTTUMWA, Ted Buck Mtrs., 114 S. Wash., Triumph.

KANSAS

ARKANSAS CITY, Zane Gray Motors, 702 W. Madison, Yamaha, Honda, Zundapp, Ducati, Norton, Royal-Enfield, BMW.

PARSONS, Allan's Cycle Shop, 24 Elm, Jawa.

PARSONS, N.M. Munding Motorcycle Service, 1526 Gabriel Ave., Harley-Davidson.

SALINA, Cycle Repair Serv., 129 S. 4th St., BSA.

SOUTH HUTCHINSON, Harley-Davidson Sales & Service, 610 South Main.

WICHITA, Harley-Davidson Cycle Co., 623 W. Douglas, Harley-Davidson, BSA, Honda.

WICHITA, Leroy's Cycle Sls., 1441 S. Wash., BMW.

KENTUCKY

COVINGTON, Ray's Cycle Co., 619 Main St., Triumph.

LOUISVILLE, John Hutchinson, 2752 - 7th St. Road, BSA, Triumph, Zundapp, Ducati.

MIDWAY, S. Eichelberger Sls., Bx. 45, All English Makes.

PRINCETON, Princeton Cycle & Motor Co., West Main St., Triumph, Indian, Zundapp.

LOUISIANA

LAKE CHARLES, Brashear's Harley-Davidson Sls., 2101 Broad Street.

LAKE CHARLES, Eunice Motorcycle Sales, 1610 N. Hwy. 171, Triumph.

MARYLAND

WHEATON, Blalock Cycle Co., Inc., 2610 University Blvd. West, BSA, Yahama, Matchless.

MASSACHUSETTS

ADAMS, Ronnie's Cycle Sales & Service, 63 Alger St., Harley-Davidson.

EAST HARWICH, Westy's Cycle Shop, Rt. 39, Triumph, BMW.

REVERE, Motorcycle Sales & Service, 240 Harris St. on Rt. C-1, Royal Enfield

SPRINGFIELD, Hogan's Cycle Shop, 111 Hancock St., Norton, Yamaha, Jawa.

SPRINGFIELD, Tibby's Matchless Cycles Inc., 215 Berkshire Ave., Zundapp, Matchless, Ducati.

SPRINGFIELD, Wolfe's Cycle Sales, Inc., 740 Boston Road, BSA.

WEST SPRINGFIELD, Superior Cycle Center, 1346 Elm Street, Harley-Davidson, Honda.

WORCESTER, N. F. Sheldon Inc., 477 Southbridge St., Harley-Davidson.

MICHIGAN

GRAND RAPIDS, John Esler, 282 W. Leonard St., Triumph, BMW, Yamaha, Matchless.

GRAND RAPIDS, Gleason's Cycle Shop, 3973 Remembrance N.W., BSA, Ariel, Jawa.

MILLINGTON, Ward's BSA Sales, 8457 State Street.

MUSKEGON, Bill's Motors, 3565 Getty St., Matchless-Indian, Triumph, BMW.

PORT HURON, Port Huron Harley-Davidson Sales, 357 River Street.

SOUTH GATE, Andrew Pelc Motorcycle, 13859 Allen Road, BSA & BMW.

ST. CLAIR SHORES, DeLuxe Cycle, 31015 Jefferson Ave., BSA, Jawa, Velocette.

MINNESOTA

BLOOMINGTON, Leo's Motorcycle Sales, 710 West 96th St., Matchless, Norton, Royal Enfield, Parilla, Ducati, Yamaha.

MANKATO, The Foreign Shop, 1917 Willow St., Triumph.

MINNEAPOLIS, Karl's Cycle Shop, 1923 - 4th Ave. South, BMW, Zundapp, Maico, NSU, Lilac, Pannonia, Ducati, Danuvia, Lambretta, Heinkel Scooters.

ROCHESTER, Rochester Triumph Sales, Rt. #3, 3 miles East on U.S. 14.

ST. CLOUD, Midway Motorcycle Company, 648 Lincoln Avenue N.E., Harley-Davidson, Cushman.

ST. PAUL, Paul's Cycle Service Inc., 841 Hudson Rd., BSA, Honda, BMW, Vespa, Cushman.

MISSISSIPPI

VICKSBURG, Balthis Cycle & Hobby Shop, 2401 Washington St., BSA, NSU.

MISSOURI

ELDON, Neal's BSA Sales & Service, East 4th Street.

ST. LOUIS, Motorsport, 6115 Gravois.

MEXICO, Bill's Harley-Davidson Sls. & Serv., Hwy. 22 W.

ST. LOUIS, Bob Schultz, 2824 Locust St., Triumph, Honda, BMW, Zundapp.

ST. LOUIS, Widman Harley-Davidson Sales, 3628 South Broadway.

SPRINGFIELD, Verne's Foreign Motors, 810 W. Kearney, BSA, BMW, NSU.

WAYNESVILLE, J & J Cycle Sales, Route 2, Box 77A, Triumph, Lambretta.

MONTANA

GLASGOW, Jim's Cycle Shop, Hiway 2, East, Mustang.

GREAT FALLS, Mel's Cycle Service, 111 - 2nd St. S., Harley-Davidson.

GREAT FALLS, Slacks Cycle Shop, 111 3rd St., South, Triumph, Honda.

NEBRASKA

FAIRBURY, Phil Mulkey, 1120 3rd, Indian, Cushman.

IMPERIAL, Trautman's Cycle Sales, 1135 N. Broadway, Harley-Davidson.

NORTH PLATTE, Sportsman's Hangout, 1819 East 4th St., Triumph, Ariel.

OMAHA, Ramer Motors, 2424 Leavenworth St., Triumph, Honda.

SCOTTSBLUFF, R. L. Crock Sales & Service, 16 E. 15th Street, Jawa.

LYNCH, D. Micanek Motorcycle Sls., Yamaha, BMW, NSU.

NEVADA

LAS VEGAS, Knerr's Harley-Davidson Sales, 723 S. 1st.

LAS VEGAS, Nevada Scooter Sales, 2538 E. Charleston Blvd., Cushman Scooters, BMW, Matchless.

LAS VEGAS, Scootersville, 1205 South Main, Honda, Lambretta, Vespa.

NEW JERSEY

ATLANTIC CITY, P & M Motor Sales, 27 S. Virginia Avenue, Vespa.

BELLEVILLE, Mickey's Cycle Shop, 78 Rutgers St., Matchless-Indian, Honda, BSA.

BLOOMFIELD, Harley-Davidson of Essex, 272 Bloomfield.

CLIFTON, Harley-Davidson Sls. & Serv., 535 Lexington.

PATERSON, Frank W. Speer, 554 Main St., Harley-Davidson.

WAYNE, The Sport Spot, Hamburg Tpke. & Ratzer Rd., BSA, BMW, Greeves, Norton, Ducati, Zundapp.

WHIPPANY, Hank Slegers Co., Inc., Rt. 10 & Ridgedale Ave., Triumph, BSA, BMW, Honda, Vespa.

NEW MEXICO

CARLSBAD, Bud's Cycle Sales & Service, 1821 W. Tex., Matchless, Indian, Zundapp, Ducati.

ROSWELL, Indian Motorcycle Sales, 1805 S.E. Main, Parilla, Matchless-Indian.

NEW YORK

BINGHAMTON, Stahl Motors, 18 Castle Creek Road, Triumph, BMW.

BROOKLYN, Cardinal Motorcycle Sales & Service, 539 Neptune Ave., Triumph, BSA, BMW, Harley-Davidson.

BUFFALO, Imperial Cycle Sales & Service, 1184 Michigan Ave., BMW, Matchless, Triumph.

BUSKIRK, Bill's Cycle Shop, Rt. 67, Harley-Davidson.

HICKSVILLE, L.I., Levittown Motorcycle Sales, 60 Jerusalem Ave., Triumph.

SIDNEY, Harley-Davidson Sls. & Serv., Rt. 7 Box 565.

SOUTH PLATTSBURGH, Easy's Motorcycles, RFD #3, Peru Rd., Rt. 22, Honda, Matchless, Zundapp.

SYRACUSE, Fred's Sport Motors, 212 Wyoming St., Triumph, NSU.

NORTH CAROLINA

WINSTON-SALEM, Ellis Cycle Center, 126 N. Marshall St., Triumph, BSA, BMW, NSU.

OHIO

AKRON, Parso & Stark, Inc., 728 S. High St., Matchless.

ASHLAND, Ikin Motorcycle Sales, 450 East Ninth St., Norton, BMW, NSU.

ATHENS, Hawk Cycle Sales, Hastings, Road, Triumph, Matchless.

BUCYRUS, Sam's Cycle Shop, 114 West Warren St., BMW, Norton, Ducati, J-Be, Zundapp.

CLEVELAND, Sill's Motor Sales, 1901 Brookpark Rd. at Broadview, Triumph, BMW, Zundapp, Cushman, Norton, Ducati, Matchless.

DAYTON, Kelley Motor Co., 428-27 East Third St., Norton, Triumph, Zundapp, Ducati, Sachs.

DOVER, Snyder's Bicycles, Toys, Hobbies, Cor. Tusc. Ave. & 4th St., Cushman.

FINDLAY, Kenny's Cycle Shop, 839 Blanchard St., BSA, Zundapp, Ducati, Hercules, Norton.

MAGNOLIA, Sandy Valley Cycle Sales, R.D. #1, Yamaha.

CHILLICOTHE, Scooter Shop, 140 West Water Street, Ducati, JB-K, Vespa, Zundapp.

OKLAHOMA

TULSA, Jandebeur's, 5268 East Pine, BSA, Honda, BMW, Parilla.

TULSA, Harley-Davidson Sales & Service, 643 W. 11th.

OREGON

PORTLAND, Cycle Hub, 3602 N.E. Sandy Blvd., Triumph.

SALEM, Adams Motorcycle Sales, 315 Mission St., S.E.,

BSA, Honda, BMW.

SPRINGFIELD, Romane Cycle Sales, 3720 Franhlin Blvd., BMW, Velocette, Parilla.

PENNSYLVANIA

ALLENTOWN, Brown's Cycle Shop, 381 Hamilton Street, Ducati.

ERIE, Starvaggi's Garage & Cycle Shop, 3417 Peach St., BSA, Ducati.

JOHNSTOWN, Indian Sales & Service, 32 Walnut St., Triumph, BSA.

MERCER, Waid's Indian Sales, Junct. Route 19 & 62, P.O. Box 205, Matchless.

PENNDEL, Riff's Cycle Center, 660 Lincoln Hwy., Triumph, BMW, Parilla, Jawa.

PITTSBURGH, Allegheny County Distributors, Inc., 14 Isabella St., Harley-Davidson.

POTTSTOWN, Frank Kiss & Co., 18 High Street, Triumph, BMW, Zundapp, Ducati.

WARRINGTON, George Klein Motorcycles, 3064 Bristol Road, Triumph.

McKEESPORT, S. C. Gebhardt, 323 9th Ave., Harley-Davidson.

PALMERTON, Miller's Cycle Shop, 439 State Rd., BMW, Norton, Triumph, Zundapp, Ducati.

PHILADELPHIA, Gene Shillingford & Sons, 1635-37 W. Hunting Park Ave., Royal Enfield.

SOUTH CAROLINA

HAMPTON, Gene Stanley Triumph Sales & Service.

SOUTH DAKOTA

RAPID CITY, Mac's Motors, 313 N. 6th St., Honda.

TENNESSEE

KINGSPORT, Jim's Motorcycle Sales, 2604 Ft. Henry Drive, Ducati & Norton.

KNOXVILLE, Herb Hitch Triumph Sales, 1509 N. Central Ave., Triumph, J-B, Ducati, Zundapp.

MEMPHIS, Al's Cycle Shop Inc., 3155 Summer Ave., Harley-Davidson, Honda.

SOUTH FULTON, Eddie's Cycle Shop, Rt. #3, Hwy. 45 East, Triumph.

continued on next page

DEALER DIRECTORY continued

TEXAS

CORPUS CHRISTI, Harley-Davidson Sls., 4428 Hiwy. 9.

DALLAS, Dallas Motorcycle Sales, 2723 Main, Zundapp, Matchless.

EL PASO, Rathburn Motor Sales, 710 Texas St., Matchless-Indian, Jawa, CZ, Parilla, Suzuki.

FT. WORTH, Carlton's Motorcycle Sales, 1517-19 E. Lancaster, BSA.

HOUSTON, Bruce Bristol, 4615 Gulf Freeway, BSA, Mustang, Honda, Parilla.

LONGVIEW, Brewer Motorcycle Sales, 1022 W. Marshall Ave., Matchless-Indian.

ODESSA, Wilson Motor Co., 1124 North Grant St., BSA, Honda, Ducati, Jawa.

WEATHERFORD, Norman Motorcycle Sales, 124 North Main, Zundapp, Ducati.

HOUSTON, Gentry Cycle Center, 3702 Tavis, BMW, NSU, Matchless-Indian.

UTAH

SALT LAKE CITY, Jim Stowe Motorcycles, 111 East 6th South, BSA, Matchless, Suzuki.

VIRGINIA

WINCHESTER, DeHaven's Cycle Shop, Sunnyside Sta., Norton, Ducati.

WASHINGTON

MOSES LAKE, Val's Motorcycle Shop, M.R. Box 44, Harley-Davidson.

RICHLAND, The Cyclist's Shop, Rt. 1, Box 240, BSA, Triumph.

SEATTLE, Scooters & Cycles Ltd., 1324 E. Pike, Honda.

SPOKANE, Brush Cycle Co., 218 Madison Street, Harley-Davidson.

SPOKANE, Empire Cycle Co., E. 6014 Valleyway, Triumph, ZDA, Norton.

TACOMA, Cascade Motorcycle Sales, 1904 Tacoma Ave. South, Triumph, Honda, ZDS.

TACOMA, Montgomery Motorcycle Co., 19th & Fawcett, Harley-Davidson.

WISCONSIN

MADISON, Cycles, Inc., 5201A University Ave., Triumph, BSA, Cushman, Vespa.

MILWAUKEE, Don & Roy Cycle Shop, Inc., 13198 W. National Ave., Box 2754, Triumph, BMW, Honda.

SHEBOYGAN, Reinl's Harley-Davidson Sales, 2735 N. 25th Street.

WEST BEND, Ron's Cycle Shop, Route 2, BSA.

WYOMING

CASPER, Casper Motorcycle Sales & Service, 1345 S. McKinley, BSA, Parilla, Matchless.

CHEYENNE, Lee's Motorcycles, 400 South Greeley Hiway, BMW, Triumph, Honda.

SHERIDAN, Matchless-Indian Motorcycle Sales, 107 E. 5th Street.

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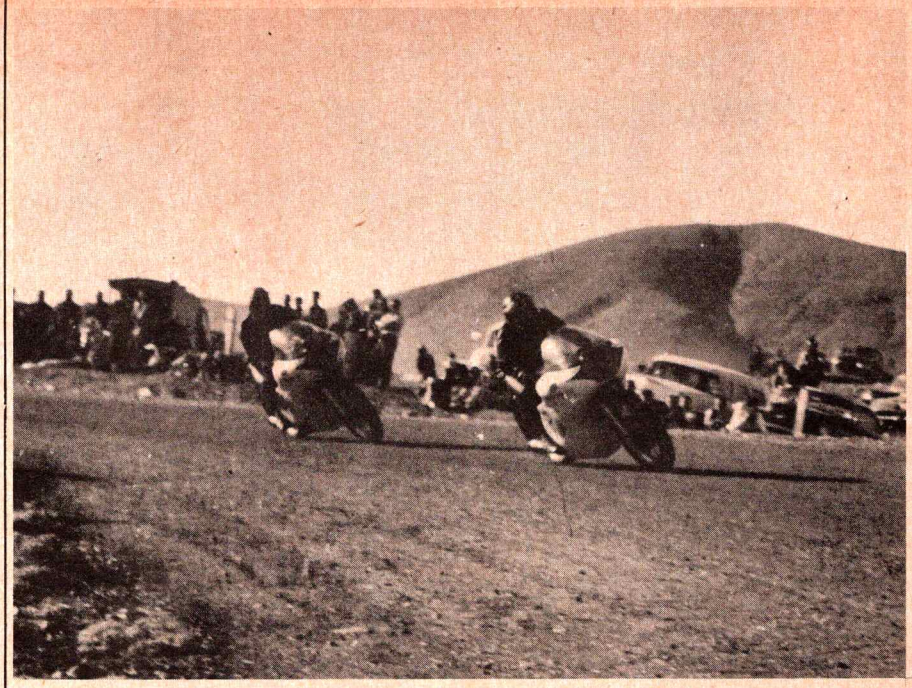

USMC INTERNATIONAL GRAND PRIX continued

SATURDAY, NOV. 4

175-200cc Class — 75 km

1. Bill Murphy, Hollywood, Cal. Ducati 175
2. Bill Disney, Pasadena, Cal. Parilla 200
3. Doug Woodward, Wilmington, Cal. Honda 175
4. Paul Collins, Redondo Beach, Cal. Honda 175

250cc — 15 miles (6 laps)

1. Ed Kretz, Jr., Monterey Park, Cal. Honda 4
2. John McLaughlin, Duarte, Cal. Honda 4
3. Don Vesco, San Diego, Cal. Honda 4
4. Norris Remscourt, Sacramento, Cal. Parilla

250-500cc — 15 miles (6 laps)

1. John McLaughlin, Duarte, Cal. Matchless G50
2. Buddy Parriott, Industry, Cal. Norton Manx
3. Al Krupa, San Diego, Cal. Norton Manx
4. Dale Alexander, Riverside, Cal. Norton Manx

Dave Buising, No. Hollywood, Cal. AJS 7R
(Finished 9th - 1st in 350cc Class)

125cc — 50 miles (20 laps)

1. Jim Lein, No. Hollywood, Cal. Bultaco
2. Gene Wise, No. Hollywood, Cal. Bultaco
3. Dan Jones, Riverside, Cal. Ducati
4. Paul Collins, Redondo Beach, Cal. Honda

SUNDAY, NOV. 5

250cc — 38 laps

1. John McLaughlin, Duarte, Cal. Honda 4
2. Norris Remscourt, Sacramento, Cal. Parilla
3. Fred Sass, Riverside, Cal. Ducati
4. Hank Roberts, Chico, Cal. Yamaha
5. Joe Coakly, Lancaster, Cal. Triumph

175cc Class of 1st Sunday race

1. Jim Lein, No. Hollywood, Cal. Bultaco
2. Paul Collins, Redondo Beach, Cal. Honda
3. Mary McGee, Hermosa Beach, Cal. Honda

INTERNATIONAL GRAND PRIX
500cc — 50 laps

1. Mike Hailwood, Oxford, England Norton Manx
2. Al Krupa, San Diego, Cal. Norton Manx (3 laps back)
3. Sonny Angel, Nat'l City, Cal. Norton Manx (3 laps back)
4. Bill Lewis, Montebello, Cal. Matchless G50 (3 laps back)
5. Don Vesco, San Diego, Cal. Norton Manx (4 laps back)
6. Dave Buising, No. Hollywood, Cal. AJS 7R (4 laps back—1st in 350cc)
7. Dave Hetzler, Northridge, Cal. Velocette (5 laps back)
8. Salvadore Soto, Guatemala Honda (7 laps back—3rd in 350cc)
9. Doug Woodward, Wilmington, Cal. Honda (7 laps back—3rd in 350cc)
10. Dale Alexander, Riverside, Cal., Norton Manx (9 laps back)
11. Stan Brassey, England Norton Manx (9 laps back)
12. Larry Lilley, Sr., Lancaster, Cal. Triumph 650cc (16 laps back—1st in Open Class)
13. Doug Van Tassel, Fresno, Cal. Norton (25 laps back—2nd in Open)

LETTERS

THE CIRCUS IS COMING
Dear CW:

Let's face facts. No matter how avid an individual may be in his enthusiasm for a sport or preoccupation, that individual is not prone to investment when the venture is new and of questionable quality.

A percentage of risk is inherent in the most stable of presentations and should you value, for future gain, a subscriber of significant worth, I would suggest you cull out a "select list" and render a sample copy or two.

How you choose to spend your money is your business; how I choose to spend my money is my business. If you think my money is going to subsidize your business, blind, then you are in league with P. T. Barnum.

DAVID L. DE WOLFE
Falls Village, Conn.

EDITOR: All we asked for was two dollars.

AN ENTHUSIASTS' SUGGESTION
Dear CW:

Enclosed is the money for my subscription. I am as you say a real cycle enthusiast of many years standing. Presently I own four Vincent HRD machines and a Steib sidecar.

As a so-called cycle enthusiast I am very tired of so-called motorcycle magazines who jam their pages from cover to cover with caboose statistics on past races, rallies, etc., and very little or no technical and mechanical information.

If you want a real great magazine to pattern your new publication after may I suggest the English magazine, Motorcycle Mechanics. This is not just my idea alone, but all of us in the San Francisco area that ride bikes.

Good luck in your new venture and I hope that yours is the kind of magazine we need so much in the U.S.

A. E. PETERSON
Daly City, Calif.

EDITOR: I should say you ARE an enthusiast. We hope we have made you happy with this first issue of CYCLE WORLD. As you can no doubt see, it is patterned after no other magazine; we hope to use the best of everything in cycling, plus a few surprises of our own. Technical and mechanical features are an essential part of this CYCLE WORLD as will they be in all future issues. Thank you for your good wishes.

NO SCOOTERS
Dear CW:

I have been buying motorcycle magazines for many years because they have been just that, motorcycle magazines.

When your new magazine is published I hope it will **not** contain many pages on scooters, mo-peds or mini-bikes. Until recently many of the leading car and hot rod magazines were spoiled with pages wasted on karts. The readers protested and as a result we have kart magazines and the rod mags are all once again filled with rods and not karts.

If your magazine is going to feature any number of scooters, mopeds, etc., I hope that in time you will publish another magazine called "Scooters", or "Motorized Bicycles". The difference between the above and a motorcycle is like comparing a Cub Scout with a Marine. Boy vs. man.

It is fine for a kid to learn on these two-wheeled vehicles but to ride one forever without having the joy of a motorcycle is a pity indeed. Please do not let us "forever motorcycle" fans down. We have contributed for many years to cycle magazines; in return they gave us what we wanted.

The subscription I have enclosed shows that I still have high hopes for the future.

AL ZUBER
Paterson, New Jersey

EDITOR: Al, your letter is like many we received long before anyone ever saw CYCLE WORLD, so we are answering it for everyone. CYCLE WORLD is dedicated to the cycle enthusiast, no matter what he rides. Whether they be full size motorcycles, scooters or mini-bikes they are within our realm of interest—motorized two-wheel vehicles. A motor scooter is a great deal of fun to ride and many people depend upon them as everyday transportation. If you haven't thrown a mini-bike around yet you are missing a lot of fun. CYCLE WORLD's first love is motorcycles, and always will be, whether they are on the highways, tracks, tearing across some unsettled expanse, or being used as everyday transportation.

Thank you for your faith, we hope that you are pleased with our first issue, and that you will continue so.

GOOD LUCK TO US
Dear CW:

I am happy to see more publishers getting interested in bringing motorcycle news to the riders and public. I wish you all of the luck in the world in your new venture.

RICHARD JACOB ENGLE
Pasadena, California

READING OUR MINDS
Dear CW:

I hope your road tests will include acceleration data.

W. BURDEN
Washington, D.C.

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THE LAMBRETTA MANUAL
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MOTORCYCLING MANUAL
Fifteenth edition, published in Great Britian in 1955. The aim of this manual is to provide the newcomer to cycling with a working knowledge of what is involved in motorcycle ownership, how to keep the machine in good working condition and how to diagnose causes of trouble. 24 chapters, 196 pages, 104 technical illustrations. Hard bound.
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Postpaid $2.75

A.J.S. MOTORCYCLES by F. W. Neill
Fourth edition. Machines made from 1931 thru 1952 are covered in this handbook including the popular overhead camshaft machine and the twin cylinder spring frame model. 10 chapters, 212 pages, 55 technical illustrations. Hard bound.
Postpaid $2.00

THE J.A.P. ENGINE by A. C. Fenner
First edition, published in 1952. This book covers the J.A.P. engine line which includes motorcycle engines, racing units and industrial types. 8 chapters, 190 pages, 63 technical illustrations. Hard bound.
Postpaid $2.75

MATCHLESS MOTORCYCLES by F. W. Neill
Fourth edition. Covers Matchless motorcycles from 1933 thru 1953 including engines adapted to the Coventry Eagle, O.E.C., O.K. Supreme and Brough Superior. 10 chapters, 224 pages, 61 technical illustrations. Hard bound.
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RUDGE MOTORCYCLES by R. P. Ransom
Third edition. Features data on the repair and maintenance of Rudge motorcycles from 1934 thru 1953. 9 chapters, 114 pages, 54 technical illustrations. Hard bound.
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SUNBEAM MOTORCYCLES by D. W. Munro
First edition, published in 1954. Covers maintenance and repair data of Sunbeam Twin Motorcycles thru 1954 including types S7, S8 and S7 de luxe. 10 chapters, 138 pages, 37 technical illustrations. Hard bound.
Postpaid $2.00

VELOCETTE MOTORCYCLES by R. W. Burgess
Second edition. Covers various models produced from 1933 thru 1953 including the spring-frame MAC model introduced in 1953. 10 chapters, 200 pages, 69 technical illustrations. Hard bound.
Postpaid $2.00

MOTORCYCLE REPAIR by A. St. J. Masters
First edition, published in 1953. This book is designed for dealers and motorcycle mechanics and is an excellent technical reference manual for the shop. 13 chapters, 192 pages, 112 technical illustrations. Hard bound.
Postpaid $1.75

BSA MOTORCYCLES
Maintenance series published by Motor Cycling Magazine. First edition, 1958. Covers all BSA models from 1935 to 1940 including all 149cc to 986cc models and the Ex-W.D. 496cc M20 model. An excellent pocket sized owner's maintenance manual packed with vital technical data. 64 pages, 42 comprehensive technical illustrations. Soft cover.
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NORTON MOTORCYCLES
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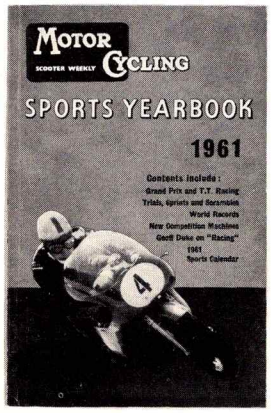

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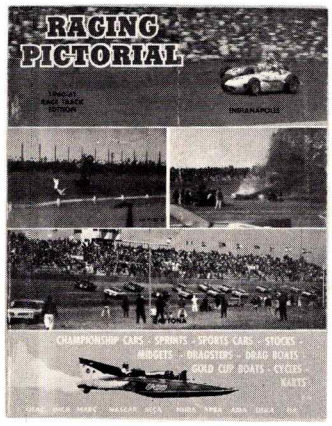
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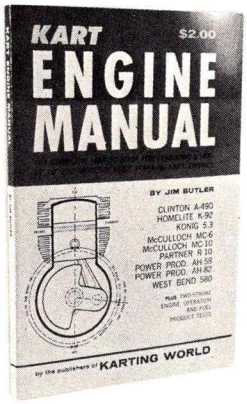

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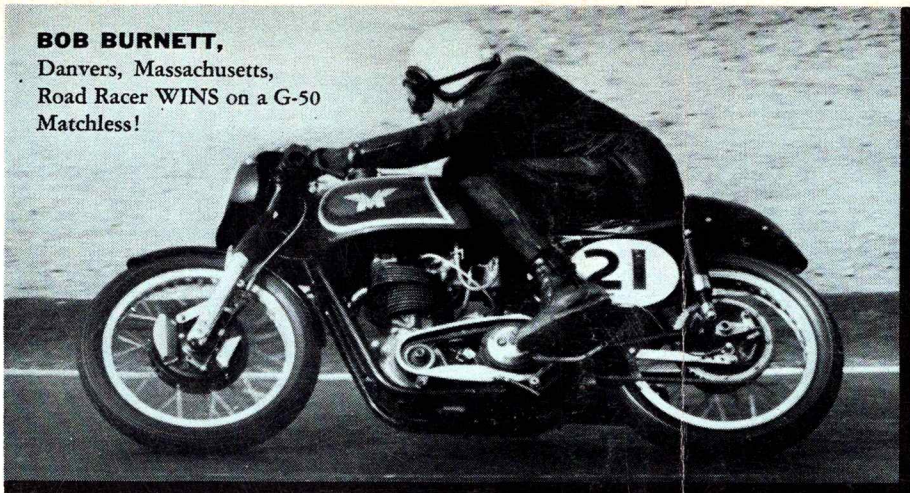

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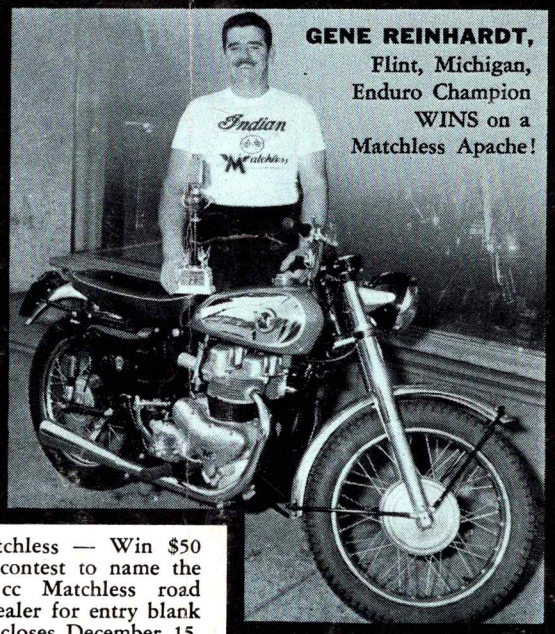

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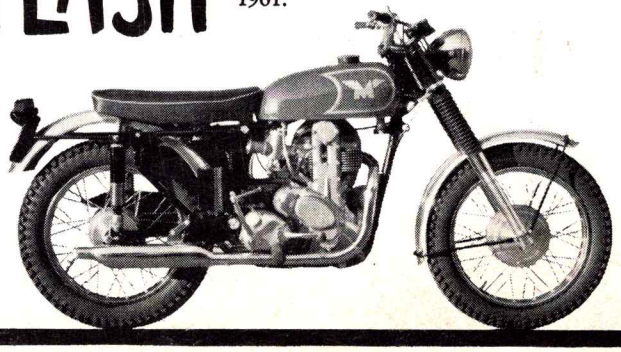

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